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MALIGNANT LYMPHOMA AND THE URINARY TRACT *

RICHARD CHUTE, M.D.
BOSTON

Under the term malignant lymphoma or lymphoblastoma are included several types of neoplastic growths of the lymphatic cells of the body, which, however, are related in that they all have the common characteristics of forming lymphatic cell tumors or infiltrations throughout the body and of being absolutely fatal. Among these are Hodgkin's disease or lymphogranuloma, lympho-epithelioma, lymphosarcoma, and also a first cousin, lymphatic leukemia, which likewise forms these tumors or infiltrations. Some pathologists, including Tracy Mallory [1] of Boston, believe that these are not separate diseases but are different types of what is fundamentally one disease, that is, a malignant lymphatic neoplasm, which on different occasions manifests itself in different ways. One of the chief reasons for believing that this is true is that in many instances a combination of two or more of these types is found in the same case of lymphoma. Therefore, in accord with this belief and for the purposes of this paper, all these types will be considered together and will be referred to under the generic term of malignant lymphoma or lymphoblastoma.

The famous Italian Malpighi [2] gave the first description of malignant lymphoma in the latter half of the seventeenth century. However, the first description of it in more modern times was given, appropriately enough for this meeting, practically 100 years ago and by an English Quaker, Thomas Hodgkin.[3] Since then, more especially in recent times, interest in and knowledge about lymphoma have been increasing, and, moreover, the incidence of lymphoma itself has been increasing, according to one German observer [4] who gives figures to show that in the routine autopsies done in that country it is being found more commonly than formerly, although it is still a comparatively rare disease. What causes it to arise is not known, only that it is apt to start with a slow, painless, firm enlargement of the lymph glands of one region, most often the neck. Occasionally it does not start in glands, but in some organ; this, however, is unusual. The process slowly spreads, and the lymph glands of other regions of the body enlarge. At first there may be no symptoms, but, as the disease progresses, weakness, anemia and cachexia creep over the patient, who may also suffer from more striking symptoms, as the result of the enlarging glands pressing on or actually invading any tissue whatsoever of the body. The patient becomes weaker and more cachetic and miserable and finally dies of anemia and cachexia, or from some pressure effect secondary to the tumor growth, or from a merciful intercurrent infection. The average length of life from the onset of the symptoms to the end is between two and one-half and three years, according to Minot and Isaacs.[5] During the course of the disease, spontaneous remissions may occur, and patients have been known to live for many years.

Naturally a tremendous variety of pains and symptoms may ensue, according to what is pressed on or invaded, and if one does not realize that it is lymphoma that one is dealing with, the pains and symptoms may be puzzling and utterly baffling. To make matters worse, from the diagnostic point of view, there are cases in which the lymphatic tumor formation starts in deeply placed mediastinal, mesenteric or retroperitoneal glands, and there are no enlarged superficial glands to give a clue. These cases are the most puzzling of all.

There are certain additional characteristics of lymphoma. The spleen is very apt indeed to be enlarged and palpable; terrific and persistent itching of the skin frequently occurs, and often there is the remarkable so-called Pel-Ebstein fever, in which the temperature suddenly rises to 101, 102, 103 or 104 F. and stays at that level, with slight daily remissions, for days or even weeks. Then, just as suddenly, it comes down to normal and remains so for a time and then suddenly shoots up again. These febrile and afebrile periods may go on alternating with one another for months.

Naturally, surgical removal has been tried in the treatment of these tumors; but, except in the very early and strictly localized cases, it is now generally considered that roentgen therapy, possibly combined with arsenic, but without surgical intervention, affords the best treatment known. Unfortunately, however, this is only palliative. At first the lymphomatous masses are extraordinarily radiosensitive, melting away after the first treatments, like ice cream on a hot day, and the patient shows great improvement in symptoms and relief of pain. However, like cats with nine lives, the tumors recur, sooner or later, and also keep on spreading, with metastases cropping up in new places. Repeated roentgen treatments bring on repeated temporary improvements, but each time the improvement is shorter and less pronounced, until finally the disease gets beyond control by irradiation and runs its fatal course to the inevitable end.

* From the Urological Department, Massachusetts General Hospital.
* Read before the Section on Urology at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

1. Mallory, T. B.: New England J. Med. **199**: 96-97 (July 12) 1928.
2. Malpighi, Marcello: De Viscerum Structura (Bonn, 1666) in Garrison, F. H.: History of Medicine, ed. 4, Philadelphia, W. B. Saunders Company, 1929.
3. Hodgkin, Thomas: On Some Morbid Appearances of the Absorbent Glands and Spleen, Tr. Medico-Chir. Soc. London **17**: 68-76, 1832.
4. Lubarsch, quoted by Edelmann (footnote 17).
5. Minot, G. R., and Isaacs, Raphael: Lymphoblastoma (Malignant Lymphoma), J. A. M. A. **86**: 1185-1189 (April 17), 1265-1270 (April 24) 1926.

As I have said, lymphoma can affect and has affected every single organ and tissue of the entire body, including occasionally, of course, the urinary organs. These it affects just as it does the other tissues, either by pressure on them or by actual involvement. To cite some examples of the gross pathologic conditions found: Nodules in one or both kidneys are very common,[6] and, in a case which I saw recently, almost the entire kidney was replaced by lymphoma. One or both ureters may be surrounded by a mass of lymphoma and pressed on, or even actually invaded.[7] The bladder may be pushed up by masses of lymphoma outside it [8] or may itself be involved.[9] The spermatic cord may be infiltrated [10] and also one or both testicles.[11] Not infrequently the prostate contains nodules [12] and may even be apparently the primary seat of the disease, as in two recent cases. Involvement of the posterior urethra has been reported,[8] as well as of the penis itself,[13] and, finally, because of pressure on the lymphatics, the penis and the scrotum may be enormously swollen and edematous.[14]

The urinary signs or symptoms can be definite enough to simulate one of the more usual forms of urinary disease, or so indefinite that it is well nigh impossible to put a finger on the source of the trouble. Nodules in the prostate usually give no symptoms, but extensive lymphoma of the prostate may give the usual symptoms of prostatism.

With involvement of the kidney, hematuria, which is usually painless, may or may not occur. Obstruction of the ureter may result in a hydronephrosis, which may become infected and give pus in the urine, and sometimes a badly infected, poorly draining hydronephrosis will result, with fever, pain and a tender mass. Occasionally obstruction may give severe attacks of vomiting and pain simulating renal stone colic [15] and, although quite rare, such paroxysms of pain have occurred, accompanied by hematuria, sometimes when obvious signs of lymphoma were lacking. Locke and Minot [16] found 3 such cases in a series of 125. Also, in cases in which a growing mass of lymphoma is making painful pressure in the region of the kidney and thus giving tenderness and spasm on examination, and in which a high Pel-Ebstein fever is added to this condition, the picture looks ever so much more like sepsis about the kidney than what it really is, and makes correct diagnosis extremely difficult. Locke and Minot speak of this, as does Edelmann,[17] and I have seen one such case,[18] in which a necrotic lymphoma of the spleen simulated perinephric suppuration. Pain in the back, sometimes suggestive of renal disease, has been caused by involvement of the kidneys, the vertebrae [19] or the spinal cord, which latter condition can of course, result in a "cord bladder." Edelmann [17] describes pain, apparently radiating from the course of the ureter, but in reality found to be due to irritation by lymphoma of the posterior lumbar nerve roots of the sympathetic or of the retroperitoneal nerve plexus. Ziegler [20] advises that in cases of posterior root pains whose cause is not quite clear one should always think of lymphoma.

And, finally, from France,[21] comes the report of a painful mass in the loin, with a pyelogram giving the picture of a polycystic kidney, which turned out to be a retroperitoneal lymphoma involving the kidney.

Thus lymphoma may present very real problems in connection with the urinary tract. The most important thing in making the diagnosis is to keep the possibility of it in mind, especially in any puzzling or unusual case. If one does think of lymphoma and it is present, it will probably be diagnosed, as one or more of its characteristics will be found. If lymphoma is suspected, and enlarged glands exist, one should by all means perform a biopsy and microscopic examination of a gland, if possible. If, however, such glands do not exist, there may be other clues: the Pel-Ebstein fever, the palpable spleen, the severe itching and the weakness, cachexia, loss of weight and secondary anemia. Of course, a white cell count and a blood smear are of great service in the lymphatic leukemia type. Some consider an increase of the eosinophils in the blood one of the most valuable diagnostic points,[22] doubly so if combined with an increase in mononuclear and transitional cells. However, one should be careful, for intestinal or other parasites may be responsible for an eosinophilia. Esau [22] reports a case of a mass in the left upper quadrant, with eosinophilia which suggested lymphoma. Operation showed no lymphoma but a large echinococcus cyst at the lower pole of the kidney. Two additional diagnostic aids are the therapeutic test of roentgen treatment to see whether the masses diminish quickly in size and the roentgen picture of the chest to see whether there are mediastinal gland masses, which are very frequently present in lymphoma.

I will give the briefest possible outline of four cases taken from the published records of the Massachusetts General Hospital and one from the literature, to serve as examples of the condition under consideration:

CASE 1.—A man, aged 48, had sharp pains in the lumbar region, radiating to the testicle, with urinary frequency and dysuria. He lost 40 pounds (18 Kg.) in three months. The cervical, axillary and inguinal glands were palpable. There was a hard mass in the left lower quadrant, palpable by rectum, running into the left flank. Cystoscopy showed marked elevation of the posterior wall and floor of the bladder, between the ureteral orifices. The patient died in seven months. Autopsy showed enormous lymphomatous enlargement of the abdominal and pelvic glands causing this deformity of the bladder, and multiple lymphomatous nodules in kidneys.

CASE 2.—A man, aged 52, had had pain of four months' duration in the left upper quadrant under the costal margin. He presented also weakness and loss of weight. Urinalysis and pyelograms gave negative results, but the left kidney was low. No glands were palpable. The patient had a septic temperature. The preoperative diagnosis was in doubt; there was a strong question of perinephric abscess (?) of subdiaphragmatic abscess (?) and of splenic abscess. Operation revealed a large abscess of the spleen. The patient died after two months, and autopsy showed a large lymphoma of the spleen, which was necrotic and purulent in the center.

CASE 3.—A man,[9] aged 81, had enlargement of the glands in the neck for three years. He had become too weak to work and had lost much weight. A hard suprapubic mass was palpable. The examining finger felt a hard mass nearly encircling the

6. Case Records of Massachusetts General Hospital, Case 11491, Boston M. & S. J. **193:** 1069-1071 (Nov. 26) 1925; case 14211, New England J. Med. **199:** 94-97 (July 12) 1928.
7. New England J. Med. **202:** 1215-1218 (June 19) 1930. Flashman, D. H., and Leopold, S. S.: Am. J. M. Sc. **177:** 651-663 (May) 1929.
8. Symmers, Douglas: Am. J. M. Sc. **167:** 157-177 (Feb.) 1924.
9. Footnote 6, second reference.
10. Barney, J. D.: Personal communication to the author.
11. Colby, F. H.: New England J. Med. **202:** 657-658 (April 3) 1930. Massachusetts General Hospital: House record No. W. M. 256924.
12. Baldridge, C. W., and Awe, C. D.: Lymphoma, Arch. Int. Med. **45:** 161-190 (Feb.) 1930.
13. Baldridge and Awe (footnote 12). Case Records of Massachusetts General Hospital, Case 11112, Boston M. & S. J. **192:** 493-497 (March 12) 1925.
14. Massachusetts General Hospital: House record 299957.
15. Footnote 14. Locke, E. A., and Minot, G. R.: Hematuria as a Symptom of Systemic Disease, J. A. M. A. **83:** 1311-1315 (Oct. 25) 1924.
16. Locke and Minot (footnote 15).
17. Edelmann, H.: Beitr. z. path. Anat. u. z. allg. Path. **84:** 346-352 (March) 1930.
18. Case Records of Massachusetts General Hospital, Case 15311, New England J. M. **201:** 228-230 (Aug. 1) 1929.
19. Footnote 6, first reference. Footnote 14. Massachusetts General Hospital: House Record E. M. 286411.
20. Ziegler, quoted by Edelmann (footnote 17).
21. Secrétan, Michel: J. d'urol. **27:** 409-417 (May) 1929.
22. Esau, P.: Arch. f. klin. Chir. **149:** 563-570, 1928.

rectum. The prostate was not palpable. The urine was foul with pus. The patient died in a few days. Autopsy showed lymphoma of the wall of the rectum and of the bladder, with rigid replacement of bladder muscle by tumor, which must have resulted in a large, residual urine. Multiple abscesses and marked tumor infiltration of both kidneys were noted.

CASE 4.—A woman,[23] aged 65, had suffered from severe pain in the abdomen and back for six weeks. She was unable to void urine during the day while on her feet, but when she lay down at night she voided plentifully several times. No glands were palpable. A large, hard mass was felt in the left upper quadrant. A diagnosis of lymphoma was made. After roentgen treatment was started, there suddenly developed complete suppression of the urine, lasting seven days. Uremic coma ensued and, although the patient voided on the eighth day, she died the same day. Autopsy showed a huge retroperitoneal tumor, necrotic in places, which entirely surrounded both ureters, giving complete obstruction.

CASE 5.—A woman,[24] aged 38, had had pains in the back, weakness, and swollen glands in the neck for three months. She had lost weight. She gave a history of high fever for considerable periods at a time. Both kidneys felt enlarged and the spleen was palpable. The urine was pink with blood. The diagnosis was lymphoma, including lymphatic leukemia. Despite roentgen treatments the patient died. Autopsy showed lymphomatous involvement of the kidneys.

I have purposely taken these rather marked cases to use as examples, but many cases will be much less obvious and therefore much harder to diagnose correctly.

In conclusion, I would say that as urologists we are bound sooner or later to see some of these cases of lymphoma affecting the urinary tract, and I sincerely hope that we may be able to recognize them, for our own satisfaction and credit in making the diagnosis, to give the patient the best treatment, and to spare him an unnecessary operation done in vain.

SUMMARY

Under the term malignant lymphoma or lymphoblastoma are included Hodgkin's disease or lymphogranuloma, lympho-epithelioma, lymphosarcoma and lymphatic leukemia, all of which have the common characteristics of being fatal and of forming lymphatic cell tumors or infiltrations throughout the body.

A further characteristic is that, by means of the pressure or invasion of these widespread tumors, lymphoma may produce signs or symptoms referable to any organ or system in the body, including occasionally the urinary tract, which may mislead one to miss the fundamental diagnosis of lymphoma.

The relation of lymphoma to the urinary tract in this regard is considered, including the pathologic condition found and the symptomatology exhibited. Points in the diagnosis are taken up, and, finally, a few cases with autopsies are given as examples.

352 Marlboro Street.

ABSTRACT OF DISCUSSION

DR. A. E. BOTHE, Philadelphia: There are several important points in Dr. Chute's paper: First, he gives real evidence from clinical as well as autopsy observations that the lymphomas may give a definite group of urinary symptoms; second, he has grouped the several lymphocytic hyperplasias under one heading and called them lymphomas; and, third, he has stressed the importance of diagnosis so that early roentgen treatment may be instituted. While the literature would indicate that there is some confusion in the classification of the lymphoid lesions, such as Hodgkin's disease, lymphosarcoma, small round cell sarcoma, and lymphatic leukemia, at the same time there are certain characteristics in the typical types that separate them from one another. For instance, the round cell sarcoma shows an active proliferation of the lymphocytes with infiltration into and through the capsule, whereas Hodgkin's disease is more of an inflammatory process with proliferation of the reticulum or endothelial cells and fibrosis. So far as roentgen therapy is concerned, I am sure that the dosage varies for the different types which Dr. Chute has grouped under malignant lymphoma. The dosage that is destructive to one type is stimulating to another. For this reason it is important to differentiate the lymphomas so that effective roentgen therapy may be administered. Dr. Herbert Fox, during a recent visit to Guy's Hospital in London, had the pleasure of studying some of the original material studied by Thomas Hodgkin when he described the disease that now goes by his name. In his analysis of the seven original cases, Dr. Fox felt that case 1 was obviously tuberculosis, case 3 was one of syphilis, case 6 seemed much more like acute leukemia or lymphosarcoma than what is understood to be Hodgkin's disease, and case 5 resembled lymphomatosis. This leaves only cases 2, 4 and 7 as acceptable to the present-day understanding of this disease. This confusion is not surprising because the diagnosis is frequently difficult even with much improved technical methods. In spite of the fact that at times the differential diagnosis is difficult, this is relatively infrequent. Whether these so-called lesions are all types of one disease is still questionable. To me the important part of Dr. Chute's paper is the placing on record of several cases of lymphatic cell tumors which apparently have given rise to a fairly definite group of urinary symptoms. At the same time it must be borne in mind that many other lesions causing anemia and cachexia may give rise to the same symptoms.

DR. J. DELLINGER BARNEY, Boston: I think that Dr. Chute's intention was to call the attention of the urologist to the fact that this disease of lymphoblastoma and myeloblastoma is much more common than has been appreciated before and gives obscure symptoms. Pain in the back, obstruction of urine, and retention of urine which arose in one case with a focus in the brain and nothing in the urinary tract, purpuric spots on the skin, pyuria, and tumor of one or both testes, all or any may occur in some cases. The patients often are operated on, but surgery is always contraindicated except in the rare cases for relief of obstruction or for a biopsy. It takes a great deal of careful search, combined with the help of an internist. A blood smear may or may not show anything; there may or may not be enlargement of the spleen or other glands, but persistent study will, I think, clear up an otherwise obscure diagnosis, and once this is made operation should not be attempted, but roentgen therapy should be applied. In every case the outcome is invariably fatal, perhaps after a few weeks or months or, perhaps, years. If the kidney is involved, the prognosis is worse than if it is not.

DR. ALEXANDER RANDALL, Philadelphia: I remember a case that I had charge of as a student. Studied and lectured on as a typical picture of Hodgkin's disease, which was then considered a benign glandular condition, it was only at the autopsy that characteristic invasive growth was demonstrated. The diagnosis was then changed to lymphosarcoma, and it is a pleasure to hear today this interesting exposure of these unusual neoplasms, whose relationship to one another has always been appreciated as close but difficult of classification. At present we have a young man at the University Hospital with a mass that fills the pelvis. Cystoscopy has been impossible. Through palpation by rectum we think we can distinguish the prostate free from the tumor. The cystogram shows the bladder like a tam-o'-shanter above this mass. Dr. Ferguson has illustrated the possibility of the use of needle puncture of a tumor for biopsy specimens and diagnosis, as he is demonstrating it in the Scientific Exhibit, and we have just received the diagnosis in this case of epidermoid carcinoma by this means. This constitutes a valuable adjunct to the diagnostic methods in these deep-seated tumors.

DR. RICHARD CHUTE, Boston: I thank Dr. Bothe for speaking of what I have heard before but never knew accurately. He brings up the connection between syphilis and Hodgkin's disease and generalized tuberculosis with enlarged glands. In syphilis of course one has the blood reaction and in tuberculosis one can make biopsies. I think the new method Dr. Randall spoke of will be of much assistance in this disease.

23. Footnote 7, first reference.
24. Footnote 6, first reference.

PUBLICATIONS OF INTEREST TO THE OTOLARYNGOLOGIST FROM 1925 TO 1931

CHAIRMAN'S ADDRESS *

THOMAS E. CARMODY, M.D.
DENVER

The literature of otolaryngology, while increasing slightly in volume since 1925, has shown some variations and increased interest in a few subjects.

During this period the activities of the American Board of Otolaryngology assumed importance; the first examination was given in 1925. Dr. H. W. Loeb,[1] the secretary of the board, in March, 1925, announced the ideals of the leaders in the various American societies, under whose auspices the board was organized, as follows:

> The object of the corporation shall be to elevate the standard of otolaryngology, to familiarize the public with its aims and ideals, to protect the public against irresponsible and unqualified practitioners, to receive applications for examination in otolaryngology, to conduct examinations of such applicants, to issue certificates of qualification in otolaryngology and to perform such duties as will advance the cause of otolaryngology.

The report of the board shows what has been accomplished.

Another achievement, of which we may feel justly proud, is the initiation of publication of the *Archives of Otolaryngology*, which, while not promoting or encouraging an increase in the number of papers, has, through an able editorial board, stimulated and encouraged improvement in quality.

The most remarkable feature of the literature of otolaryngology is that relating to new diseases, or entirely new angles on treatment of already known pathologic conditions.

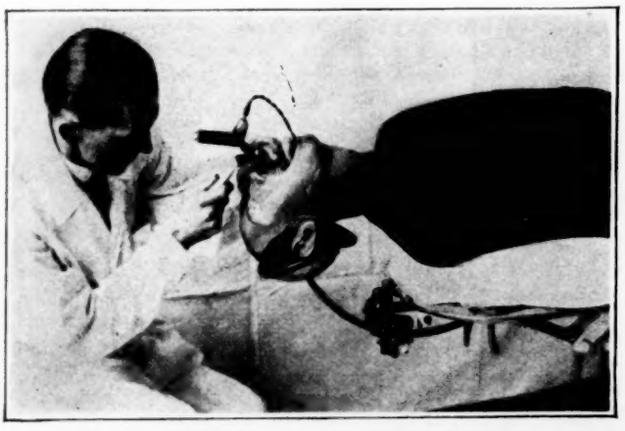

Fig. 1.—Bronchoscopic manikin of Hasslinger.

Agranulocytic angina has been responsible for many papers during this period. The first of importance was one by R. J. Hunter,[2] appearing in May, 1926, although twenty cases had been reported in the three previous years. We have learned much about this pathologic entity since that time, but we are as yet almost if not entirely helpless in its treatment.

A small number of unusual pathologic conditions have been reported, which, since they are rare, will be mentioned:

"Some Uncommon Types of Neoplasms About the Head," reported by J. C. Beck.[3]

"Psammoma (Brain Sand Tumor) Removed from Ethmoid and Sphenoid Areas," reported by H. M. Goodyear.[4]

"Xerostomia" four cases, reported by W. B. Chamberlin.[5]

"Primary Blastomycosis of the Tongue," reported by J. H. Childrey and G. B. New.[6]

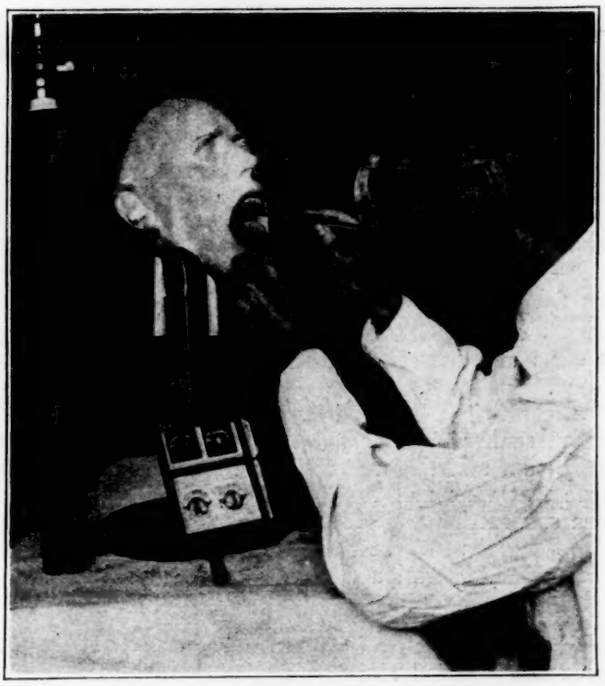

Fig. 2.—Laryngologic manikin showing method of examination.

Regarding pathologic studies of more general interest, I mention an article by B. J. McMahon[7] on the changes in the mucosa and in the bony walls of the sinuses and mastoid, which have many points of similarity in their variation from normal. He found that the most important changes were taking place in the mucosa; changes in the bone were less frequently found and not considered by him of as great importance. His observations agree in the essential points with those of Kistner[8] and myself,[9] with the exception of the bacteriologic results in the tissues studied by Kistner. The fact, brought out by Kistner, that bacteria found in the deeper layers of the lining mucosa differ markedly from those found in the sinus cavity has to some extent influenced our mode of treatment.

Two important contributions have come from the laboratory of Dr. H. P. Mosher. The first concerned the regeneration of epithelium in the sinuses, after removal of the entire membrane, which was ably done and presented by McGregor.[9a] The other, only recently

* Read before the Section on Laryngology, Otology and Rhinology at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 10, 1931.

1. Loeb, H. W.: Progress in American Laryngology, Ann. Otol., Rhin. & Laryng. **34**: 1 (March) 1925.
2. Hunter, R. J.: Agranulocytic Angina, Laryngoscope **36**: 348 (May) 1926.
3. Beck, J. C.: Laryngoscope **40**: 511 (July) 1930.
4. Goodyear, H. M.: Ann. Otol., Rhin. & Laryng. **39**: 463 (June) 1930.
5. Chamberlin, W. B.: Xerostomia, J. A. M. A. **95**: 470 (Aug. 16) 1930.
6. Childrey, J. H., and New, G. B.: Primary Blastomycosis of the Tongue, Arch. Otolaryng. **12**: 184 (Aug.) 1930.
7. McMahon, B. J.: Ann. Otol., Rhin. & Laryng. **38**: 732 (Sept.) 1929.
8. Kistner: Tr. Am. Laryng., Rhin. & Otol. Soc., p. 180.
9. Carmody, T. E.: Tr. Am. Laryng. A., 1926, p. 184.
9a. McGregor, G. W.: Arch. Otolaryng. **8**: 505-519 (Nov.) 1928.

published, by George E. Shambaugh, Jr.,[10] shows a thorough study and well analyzed work on the basement membrane of the mucosa of the upper respiratory passages.

The first of these articles apparently proves that regeneration can be complete in certain areas and has been the stimulus for much of the work that has been carried on since its completion. The latter article, while not to be considered as absolute proof, at least suggests that the basement membrane, as found in the respiratory tract, is largely or entirely a product of inflammation.

The advance in knowledge of allergic reactions has been noteworthy, with an increase in the number of publications as greater numbers of otolaryngologists have become interested. The papers covering this subject which relate to hay-fever and asthma are of especial interest and value but are frequently linked with observations on operative technic which sometimes add to and at other times detract from the value, since

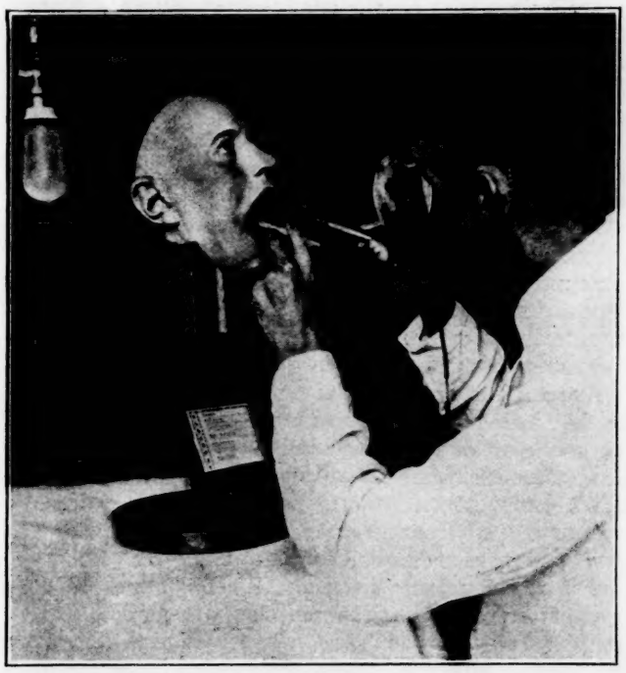

Fig. 3.—Laryngologic manikin showing method of application to different points of the larynx.

the author is most frequently overenthusiastic either for or against operative treatment.

Kahn[11] treats the subject exhaustively, from the standpoint of the asthmatic patient, and attempts to coordinate allergic and operative treatment.

The advance in diagnostic methods has kept pace with that in pathology. The use of radiopaque substances in the sinuses, introduced either by injection or by the creation of a vacuum, as suggested and carried out by Proetz,[12] has not only been an aid in diagnosis but has also given much food for thought in our study of gross pathologic changes. Cytologic examination of the fluid contained in accessory nasal sinuses is a distinct advance in diagnosis and, as carried out by Sewall[13] and Dean,[14] gives much valuable information on hidden pathologic conditions.

Technic, in relation to diagnosis and treatment and also in experiments as to the cause of injury and the source of infection, has increased our percentage of correct diagnoses and improved our results in operative treatment.

The manikins of Hasslinger[15] have many advantages over the older methods in the teaching of laryngology and bronchoscopy.

The anatomic investigations of Naftzger[16] have disproved old theories and given us more correct ideas regarding treatment of fractures of the bones of the face.

Roentgen treatment of adenoid and lymphatic tissue, in association with surgery, is being more widely used, but the much vaunted use of x-rays and radium for the destruction of tonsils has fallen almost into disuse.

The use of the endothermic knife or needle for the destruction of portions of the tonsils, by those who are either too timid to remove the tonsil surgically or who wish to play to that element of the profession or laity who want something new, has done infinite harm by sealing infection in the tissues, for in most cases the tonsil is not removed or completely destroyed.

It is impossible to mention more than a few of the many good papers that have been published in the last few years, but it is hoped that this brief outline of the literature of our specialty during that time will stimulate us all to increased effort.

227 Sixteenth Street.

10 Shambaugh, G. E., Jr.: The Basement Membrane in the Mucosa of the Upper Respiratory Passages, Arch. Otolaryng. **13**: 556 (April) 1931.
11. Kahn, I. S.: Wisconsin M. J. **27**: 402 (Sept.) 1928.
12. Proetz, A. W.: Ann. Otol., Rhin. & Laryng. **37**: 806 (Sept.) 1928.
13. Sewall, E. C.: Ann. Otol., Rhin. & Laryng. **37**: 642 (June) 1928.
14. Dean: Ann. Otol., Rhin. & Laryng., June, 1928.
15. Hasslinger: Personal communication to the author.
16. Naftzger, J. B.: Ann. Otol., Rhin. & Laryng. **37**: 486 (June) 1928.

THE ANEMIAS OF INFANCY AND EARLY CHILDHOOD

SOME OBSERVATIONS *

LEONARD G. PARSONS, M.D., F.R.C.P.
Professor of Diseases of Children in the University of Birmingham
BIRMINGHAM, ENGLAND

Some three years ago I had the honor of receiving a distinguished American pediatrician as my visitor—Dr. Edwards Park of Baltimore. Among the many interesting things he told me during his all too short stay was an enthusiastic description of certain experiments on the production and cure of nutritional anemias in rats, which were being carried on at the University of Wisconsin, by Professors Steenbock and Hart. I was so impressed by what Dr. Park told me that I made myself familiar with this work and determined to attempt to apply some of the investigations to clinical medicine. It seemed to me therefore only fitting that when you did me the great honor to invite me to be your guest I could in a very small way best repay your courtesy by offering to Dr. Aldrich the subject of anemia as one of two alternatives for my address to you. Although he did not know the reason that actuated my suggestion of anemia, yet he chose it; but when I began to write this paper my pen was struck dumb with horror at my temerity, because I found I had so little to say that is not common knowledge! I ask, however, your clem-

* Read before the Section on Diseases of Children at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 10, 1931.

* Dr. E. M. Hickmans carried out the biochemical investigations mentioned in this paper and Dr. Margaret Thorpe was responsible for all the hematologic investigations and many of the clinical examinations. The Medical Research Council defrayed the expenses of the investigation.

ency because I am sure you will all sympathize with me; and those of you who have attempted work on any big subject, however straightforward it appears to be, will know that so much time is spent on the preliminaries, on clearing away the undergrowth so that you can see the thing that you wish to investigate, that the months slip rapidly away without anything very definite having been achieved.

The remarks I have to make are based on a study of fifty sick children suffering from anemia, not a very large number, but sufficient, I believe, to draw certain conclusions, and I propose to deal particularly with nutritional and constitutional anemias.

CLASSIFICATION

While the usual classification of the anemias in adults cannot be regarded as completely satisfactory, it is only rarely that an individual case cannot be placed in some recognized group the members of which show symptoms, a blood picture and a course which separate them off fairly sharply from other groups. On the other hand, in children and particularly in infancy the difficulties in classification are much greater and the younger the organism the more heterogeneous are the manifestations of disease affecting the blood. There is obviously some essential difference between the hematopoietic system of the fully grown and that of the growing organism and it is probable that the explanation is that the hematopoietic system shows that instability which is so characteristic of all the systems in infancy. Thus it is significant that primitive forms of nucleated red cells—megaloblasts and macronormoblasts—appear in the circulating blood of anemic infants far more frequently than in older children and adults; a fact which suggests that prenatal hematopoiesis can more easily be called into play, for although the change over from the embryonic depots of blood formation takes place during the later months of gestation, this change is a very gradual one and continues throughout the early months of postnatal life. In the infant as compared with the adult there is very little reserve bone marrow space, and the readiness with which these extramedullary centers can be called into play is probably a mechanism to compensate for this; in other words, there is not the sharp separation off of the bone marrow as *the* blood cell factory. For these reasons the occurrence of myelocytes in infancy has not the same significance as their appearance in the circulating blood of the adult.

A classification of the anemias solely according to the blood picture is therefore, if not impossible, valueless, for a similar blood picture may be given by cases which have quite different pathogeneses. Indeed, even during the course of the illness the blood picture may change; thus a case at one time may show marrow activity and produce the blood picture described by von Jaksch and later on show the characteristics of the chlorotic anemia of French writers. For the same reason, at any rate in the present state of our knowledge, it is inadvisable to divide anemias into primary and secondary groups but rather to regard all infantile anemia as secondary either to some disturbance in the child's health or to some defect in its diet. In other words, the anemia is a response on the part of the blood to some form of injury, and it is possible, as suggested by Cooley, that the type of response may vary in different races and that herein lies the reason, for instance, of the limitation of sickle cell anemia to the Negro race.

For the purposes of classification the pseudoleukemia of von Jaksch is regarded as a syndrome which may arise from many different causes. On the other hand, the true leukemias are not included, since they are relatively unimportant in the anemias of infancy, being probably neoplastic diseases and not a response of the blood to noxious stimuli.

Bearing these points in mind, the anemias of infancy may be thus classified:

1. Those due to a defect of nutrition.
   (*a*) Simple or dietetic anemias.
   (*b*) Endogenous or constitutional anemias.
2. Those due to infection.
3. Those due to abnormal hemolysis.
4. Those due to a combination of one or more of the preceding causes.

SIMPLE NUTRITIONAL ANEMIA

The existence of a nutritional or alimentary anemia in artificially fed infants has been stressed for many years by workers on the continent of Europe. Nevertheless only scanty attention has been paid by British workers to this form of anemia and the textbooks have little to say on the subject, which is unfortunate because the condition is relatively prevalent. Within the last five years, however, important observations have been made by Dr. Helen Mackay on London babies. The babies she examined were not ill but were infants of the type usually found at a welfare center, and as a result of her investigations she came to the conclusion that most artificially fed London babies were anemic. The presence of anemia was not determined by cell counts but by hemoglobin estimations, and on doing this at monthly intervals it was found that there was a sharp fall to about 65 per cent at from 2 to 3 months of age, a rise to about 70 per cent at from 5 to 6 months of age, and then a steady fall through the rest of the first year, reaching about 65 per cent at the end of twelve months; from this time until the fifteenth month the fall continued and then the curve began to rise. In breast fed children the fall was rather less marked and differed in that the hemoglobin began to rise after weaning at 9 months. An interesting comparison with similar observations made by Drucker on healthy babies in Copenhagen showed a very different state of affairs, the infants being free from anemia. On the assumption that the fall in hemoglobin was due to a deficiency in iron, the double salt of iron and ammonium citrate was administrated in 4½ to 9 grain (0.3 to 0.6 Gm.) doses daily, with the result that the fall did not occur. From many similar observations it was concluded that the anemia was the result of iron deficiency; that it was not due to one particular form of feeding, and that it was most marked in babies who were small at birth and who, relative to their initial weight, increased in size rapidly. One other point of importance should be mentioned; namely, that in the presence of infection the response to iron was not rapid, and, conversely, it appeared certain that resistance to infection was lowered by iron deficiency.

It is clear that this large group of anemic but otherwise healthy children can be regarded as constitutionally normal, and it therefore seems reasonable to conclude that the cause of the fall in hemoglobin is to be sought in the absence from the diet of certain substances which are essential for hemoglobin synthesis. Again, since the fall occurs late in the lactation period, it is probable that the infant is born with a store of this

substance or substances which is gradually used up during this period, and the explanation of the difference between Copenhagen and London children is possibly to be sought in the superior antenatal maternal diet of the former.

As early as 1889, von Bunge showed that milk had a very low iron content and that the amount of iron present in the liver and spleen of young mammals was highest in the new-born and at a minimum at the end of the suckling period; that is, that during the milk period these iron depots served as sources for the building of hemoglobin. The guinea-pig is an interesting exception to this rule, but the young guinea-pig almost at once begins to eat any foodstuff within reach and is dependent on an exclusively milk diet for only the first day or two of life. The storage of iron in the fetal depots has been shown by Nicholas to take place mainly during the final third of pregnancy and to be most rapid during the early part of that period. It is therefore a logical deduction that milk feeding prolonged beyond the normal weaning period will lead to still further lowering of the hemoglobin level.

The correctness of this deduction was first demonstrated experimentally by Abderhalden, who in 1899 not only produced an experimental nutritional anemia but also demonstrated that the addition of inorganic iron did not bring about any increase in hemoglobin. Commenting on this result, Abderhalden says, "The mere fact that the addition of iron to nutriment poor in iron does not have any distinct influence upon the formation of hemoglobin in no way speaks against the participation of inorganic iron in the synthesis of hemoglobin in the case of normal nutrition, but it indicates that other building material is wanting as well as the iron."

I think that in all fairness it can be said that nothing of any importance to clinical medicine has been added to the knowledge of experimental nutritional anemia from the time of the enunciation of this hypothesis by Abderhalden until the extraordinarily able series of experiments on "Iron in Nutrition" were started in 1925 at Madison, Wis., by Hart, Steenbock and their colleagues; experiments that have created an intense interest in the subject of nutritional anemia on the part of pediatricians in many countries. The results of their investigations help to explain the apparently diametrically opposed views of the clinician and the physiologist; on the one hand Helen Mackay, who states that the simple addition of iron in the form of iron ammonium citrate to the diet cures simple nutritional anemia in infants; and on the other hand Abderhalden, who held that hemoglobin can be built up from inorganic iron in the diet only when accompanied by some other factors.

Rôle of Iron and Copper in the Building of Hemoglobin.—Time will not allow me to mention all the experiments performed on rabbits and rats by the Madison workers and doubtless all are familiar with them, but I may perhaps be allowed to mention a few of the results. Finding that anemia was cured by adding to milk the ash of lettuce and cabbage, they drew the deduction that the cure was due to the presence of inorganic material; finding also that anemic rats given liver remained anemic whereas if ferric chloride was added they were cured, and knowing that liver contained copper, the idea of adding copper salts to the iron salts occurred to them. They then found that feeding pure inorganic salts of iron to anemic rats produced no effect but that impure iron salts produced a cure, as did pure inorganic salts of iron when combined with small amounts of copper. Trial was made of many other inorganic substances and all metals known to occur in foodstuffs, but copper alone gave never failing results. They therefore came to the conclusion that small amounts of copper were necessary for hemoglobin synthesis.

Elden, Sperry, Robbins and Whipple, working with anemic dogs, came to the conclusion that a balanced salt mixture rather than copper alone was essential for hemoglobin regeneration, and, in a recent investigation of an anemia in suckling pigs, Hart, Elvehjem and Steenbock found that feeding of iron alone stimulated hemoglobin synthesis as well as when the iron was supplemented with copper. They point out that there are two possible explanations of this. First, the iron reserves in the young pig may be depleted and, as soon as this element is supplied, hemoglobin synthesis takes place without the addition of copper. Second, the pigs were not placed under as restricted conditions as were the other animals used in their earlier work and were probably able to acquire small amounts of copper, for it must be remembered that copper probably acts as a catalyst since only small amounts of it are required to enhance the work of iron, thus furnishing another example of the importance of the "little things" in nutrition.

McHargue and his co-workers have found that at birth the livers of calves contain more copper than those of older animals and, further, that the copper content of infantile liver is about 20 mg. per kilogram of wet tissue, compared with 9 mg. in the adult. Morrison and Nash found that the average copper content per kilogram of fresh tissue of twenty-five infants was 24 mg., or about six times the average value for seven adults. We have estimated the amount of copper and iron in carcasses of rats from birth to the weaning period and although the absolute amounts of these elements rise (chart 1) there is a continuous fall throughout the lactation period, when the amounts are expressed as percentages of the dried weight of the animal, which is the important comparison to make (chart 2). The copper and iron content of the liver has also been estimated in a small series of infants and over a shorter period of time. Here again the fall in both elements occurs (chart 3). These facts are obvious if reference is made to the charts. The average iron content of the infant liver was 280 mg. per kilogram of fresh tissue and 29 mg. of copper.

With regard to the effect that the maternal diet may have in the production of nutritional anemia, a point to which reference has already been made, it is of great interest to note that in the work on anemia of young pigs it was found that the feeding of considerable amounts of iron and copper to the sow did not delay the development of anemia in the suckling pig.

In connection with this question of storage of iron and copper during fetal life, it is significant that anemia is so common in premature babies and in twins. This anemia may be of a simple nutritional type but is not infrequently complicated by some "constitutional defect" which delays cure, and it may be due, indeed one can go further and say probably is due, to deficient storage before birth of copper or some other undiscovered substances essential for hemoglobin synthesis in the growing organism.

Rôle of Amino-Acids in the Building of Hemoglobin.—So much for the moment as to the necessity

for the presence in the food and for the fetal storage of inorganic constituents required for the synthesis of hemoglobin. Let us now turn for a short time to the question as to whether there are any *organic* constituents which it is essential to supply in the food. Hemoglobin consists of a protein of the histone class called globin united with hematin. Now globin is composed largely of histidine, an amino-acid containing the iminazole nucleus, whereas hematin consists of iron in association with substituted pyrrole groups. Since it has not yet been proved that the body can synthesize either the iminazole or the pyrrole nucleus, until such a synthesis can be proved the only possible source of their origin must be from the proper digestion and absorption of an adequate dietary. That normal digestion and absorption are important factors in the production and cure of anemia has been proved conclusively in the case of pernicious anemia by the work of Castle, who has demonstrated the existence in it of a specific type of gastric defect. The importance of these factors has been particularly shown by his most recent observation, in which a marked reticulocyte response was obtained in a patient suffering from pernicious anemia when an extract of liver (fraction G) was given intravenously,

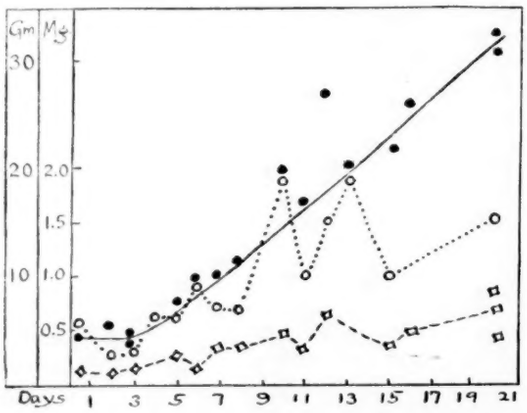

Chart 1.—Amounts of copper and iron present in the carcasses of rats from birth to the end of the weaning period. The solid line and dots indicate body weight in grams. The circles and dotted line indicate actual weight of iron, in milligrams, in body of rat. The squares and the broken line indicate the weight of copper × 10, in milligrams, in body of rat.

whereas no such response was obtained when it was taken by mouth.

In the year 1923 Hirasawa, and Matenoka and Hirasawa stated that tryptophan stimulated hemoglobin production in various forms of experimental anemia in the rabbit. Last year Fontés and Thivolle found that the subcutaneous injection of tryptophan or histidine, or, better still, of both these amino-acids, led to an increase in hemoglobin and red blood cells in dogs and rabbits; further, that rats fed on a diet deficient in these substances became slightly anemic. These observers then tried the effect of a daily injection of 100 mg. of tryptophan and 200 mg. of histidine in cases of pernicious anemia and found that the anemia was apparently cured. Drabkin and Miller, in a paper published this year, record the cure of milk anemia in rats by the addition to the milk of pure amino-acids which were copper free and contained only a trace of iron. Of the amino-acids used, arginine, glutamic acid and their salts were found to be most effective for the regeneration of hemoglobin. They point out that these results, taken together with those in which the anemia was cured by giving iron or iron and copper, are probably due to the fact that in the nutritional anemia of rats both iron and organic factors are necessary for the actual synthesis of hemoglobin.

Before leaving this experimental work I should like to mention two other interesting facts that have emerged from our investigations. Rats suffering from nutritional anemia are cured of their anemia by the addition of iron and copper to their milk diet, but so far we have not succeeded in obtaining a second generation, even after the anemia is cured, if the rats are kept on the same diet. If, however, they are not kept too long on a milk, copper and iron diet but are put on a stock diet, they become capable of reproducing. Now we have found that yeast added to the diet of milk anemic rats not only cures the anemia but has permitted the breeding of a second generation while still on the diet of milk and yeast.

The condition of the progeny is of the greatest interest. They are small and anemic but very lively. One rat of a litter of eight had a hemoglobin of 15 per cent at the end of the weaning period and when killed was found to have an enlarged spleen. Another rat of the same litter died and its spleen was about three times the normal size. Yet another rat showed a hemoglobin of 12 per cent, a white cell count of 14,600 and a red cell count of 3,340,000 per cubic millimeter, giving a color index of 0.2; the stained film showed marked irregularity in the size and shape of the red cells and a large number of nucleated forms. It is interesting to note that an estimation of the mother's blood on the same day showed a red cell count of over 5,000,000 per cubic millimeter and a hemoglobin percentage of 96.

We have therefore succeeded in producing in rats a congenital anemia with splenomegaly very similar to, if not identical with, the group of cases in children which I shall describe under the head of "constitutional nutritional anemia." I regret that I have not yet any data of the effects of treatment on these congenitally anemic rats.

Brewers' yeast, as usually grown, contains considerable amounts of copper and iron, and the presence of these is a possible explanation of the cure of the anemia. My colleague, Miss Hickmans, therefore set about obtaining a yeast grown in a copper and iron free medium and also yeast grown in a medium containing iron but free from copper. These cultures have now been obtained in sufficient quantities to try feeding experiments. Elvehjem has recently also grown yeast in copper and iron free mediums.

Application of Experimental Results in Treatment of Anemias.—As far as the therapeutic application of these researches is concerned, we have found that, when iron therapy and a varied diet have failed to cure the anemia rapidly, the addition of copper has made no difference to the slow progress of the condition. In all cases diagnosed as simple nutritional anemia, iron and a mixed dietary have led to a speedy rise in the hemoglobin level, but the iron salt used has always contained traces of copper. To put it another way, all cases of simple nutritional anemia have been cured by the giving of a mixed dietary and a salt of iron which contains copper as an impurity, but cases of what we call constitutional anemia which resist this form of treatment have not shown any improvement by the addition of copper. This does not necessarily mean that the copper treatment is a failure but that there is some factor other than a

nutritional one concerned with the production of this particular group of anemias. The preparation of iron used with such success by Helen Mackay contained, according to Professor Hart, who estimated it for her, 1.7 mg. per hundred grams. The methods of treatment used by us have included the administration of iron ammonium citrate, reduced iron, and copper sulphate; the ash of lettuce has also been tried in a dose which represents the ash of one large lettuce; copper and iron have also been given in the proportion

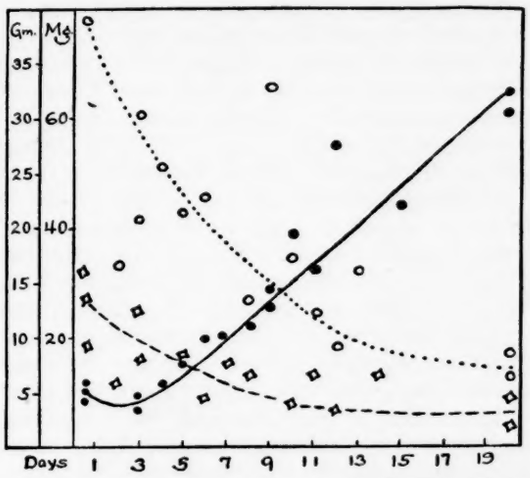

Chart 2.—Amounts of copper and iron in the carcasses of rats from birth to the end of the weaning period. Copper expressed as mg. per kilogram of dry tissue and iron as mg. per hundred grams of dry tissue. Solid line and dots, body weight in grams. Circles and dotted line, iron. Squares and broken line, copper.

in which they are found in lettuce ash; dried yeast, liver extract and blood transfusions have also been employed from time to time.

So far as I am aware, the first reports of cases published showing the effect of copper in the treatment of infantile anemias is a small series reported by Josephs to the pediatric section of the New York Academy of Medicine. Josephs' criticism of his cases is so obviously that of an honest and careful observer that it is worth quoting in full. He says:

> These results with copper were somewhat surprising. I did not expect them and I do not know what to make of them. More controls are needed before I can draw any conclusions as to the effect of copper in the treatment for anemia. The results thus far have tended to confirm the results in the anemia of rats as first obtained in Steenbock's laboratory. In a number of cases I can say definitely that the hemoglobin formation was accelerated by the use of copper.

In a recent issue of THE JOURNAL, which I saw just before leaving England, there is a paper by Lewis [1] on the treatment of anemia in children by copper and iron. Thirty-four children were treated and he states that no case in the nutritional series failed to respond to iron and copper, and in the charts accompanying the article it is clear that the response to iron and copper is much greater than the response to iron alone. I think that his conclusions are correct deductions from his observations, but the proof is not absolutely conclusive because he did not add iron or iron and copper to a milk diet alone but gave a varied diet. With regard to this he remarks that the response to diet is a matter of months whereas that of iron and copper is one of weeks. Lewis also made an observation which has been our experience and also that of Helen Mackay that infection interfered with the rate of blood regeneration, an interesting and important point and one which may perhaps be compared with the similar effects of infection on the action of insulin and parathyroid hormone.

I have no knowledge of the treatment of anemia in children by the administration of amino-acids.

1. Lewis, M. S.: Iron and Copper in the Treatment of Anemia in Children, J. A. M. A. **96**: 1135 (April 4) 1931.

CONSTITUTIONAL NUTRITIONAL ANEMIA

I now come to a group of cases of great clinical interest. These are instances of anemia in infants which may be noticeable as early as the first few weeks of life but in any case gradually increase in severity as the infants get older, and on which a varied diet and all forms of treatment appear to produce no effect. Improvement usually does eventually occur but from no obvious cause, although possibly hygienic measures and dieting may be factors. The usual age at which recovery occurs is about 2 or 3 years, but these children are often unable to withstand any intercurrent disease, or the anemia itself may be so severe as to cause death, an event which is especially likely to occur if the red cell count remains low or falls after blood transfusion. The most striking feature in the etiology of this type of anemia is that it frequently occurs in premature children or in twins and particularly in premature twins; other etiologic factors are first pregnancies and bad home conditions. There is no association with icterus neonatorum, rickets or syphilis, and although these children are always difficult to feed, feeding probably has little to do with the onset of the anemia. It is more than probable, especially in view of our experimental results, that the instances of "primary anemia of the new-born" are examples of this constitutional anemia except that the anemia is observed at or soon after birth and is perhaps rather more severe. Actually in three of our cases it was stated by the mother that the pallor was noticed when the baby was born.

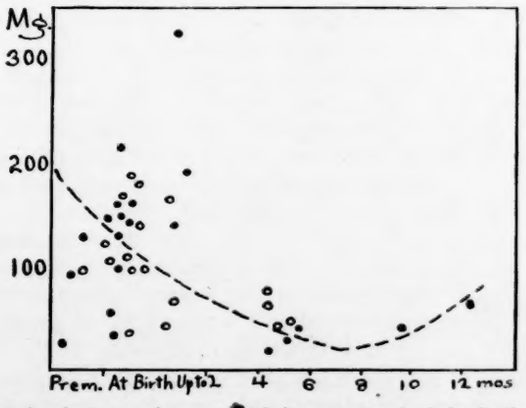

Chart 3.—Amounts of copper and iron present in infant's liver at varying periods from birth to age of 1 year. Solid dots, iron in milligrams per hundred grams of dry weight of liver. Circles and broken line, copper in milligrams per kilogram of dry weight of liver.

In our cases the anemia was found most often to be chlorotic in type but at times a greater fall in the red cell count was noted than would be expected in a chlorotic anemia, and this was sometimes due to infection. The average diameter of the red cells was normal, but in one severe case—which also showed urobilin and urobilinogen in the urine—the cells were slightly enlarged. Reticulocytes were increased slightly, averaging from 0.5 to 0.4 per cent of the red cells. Sometimes there was a leukocytosis which was the

result of an intercurrent infection, and in these cases myelocytes and large numbers of nucleated red cells were also found. On the other hand, a slight degree of leukopenia was also found in some cases. Otherwise the differential count was within normal limits except for the presence of very large lymphocytes with a nucleus like, but with less cytoplasm than, the typical lymphoblast. In half our cases the spleen was enlarged but never to more than a moderate degree. These children, as stated, showed no dramatic response to any form of treatment, but careful attention was paid to the nursing; good hygienic conditions were secured and a varied diet given, and after the second year spontaneous cure set in.

Possibly the cause of this condition is a temporary error of metabolism, but of what nature I cannot say. There is some evidence of an inborn error or lack of some substance or substances which the infant cannot synthesize from his food afforded by our yeast rat experiments and also by the facts that so many of the patients are either premature or twin babies, or both. Whatever the cause may be, the reticulo-endothelial system is affected, resulting in a defect of hemoglobin synthesis with or without a diminished number of red cells.

Following the German literature, these cases have been classed under the heading of nutritional or alimentary anemias, although I have placed them under a separate subheading. There are, however, many cases intermediate between the two subgroups of "simple" and "constitutional" nutritional anemias and it is usually necessary to watch the effect of treatment for several months before relegating any given cases to the "constitutional" group.

It is obvious that Czerny and Kleinschmidt are in their writings dealing chiefly with this group of cases for they both noticed the liability of premature infants, twins and triplets to suffer from a chlorotic type of anemia and the frequent association with it of lymphatic hyperplasia, especially splenomegaly. Neither found any specific cure except in rare cases in which iron led to speedy recovery. These iron-cured cases would, I presume, be placed in the simple nutritional group of my classification. Kleinschmidt attributed nearly all cases of anemia in infancy to nutritional causes, denied the possibility of rickets leading directly to alteration in the blood, and minimized the part played by infection except in glandular tuberculosis and syphilis. He said that the anemia following a prolonged milk diet is related to constitutionally abnormal children and cannot be explained on iron deficiency alone; that it appears in all grades of severity and gives a varied picture owing to the combination of the most varying constitutional anomalies.

Czerny, on the other hand, regarded the anemia as the result of a milk injury, a hemolysis due to the action of products of milk fat metabolism (fatty acids). There is, however, no convincing evidence to prove this action because before this theory can be accepted it must be possible to prove hemolysis in all cases. The presence of urobilinogen in the urine has been adduced as evidence and while not denying the value of this evidence I can say that it has been found in our cases only on rare occasions. The intense regenerative anemia associated with goat's milk is of interest in this connection. Goat's milk anemia, which progresses to a much more severe degree of anemia than cow's milk anemia, is not uncommon in Germany and cases have been reported in America but none so far in England. The molecular weight of the fatty acids of goat's milk is higher than that of cow's milk and to this fact are said to be due its greater anemia-producing qualities; on the other hand, it has been suggested that the striking megaloblastic response which occurs is due to stimulation of persisting fetal extramedullary hematopoietic centers.

The question of the occurrence of anemia in rickets properly falls for discussion under the heading of nutritional anemias, and diverse opinions have been expressed as to its frequency. A. F. Hess says that in his experience, which embraced mainly rickets of mild or moderate degree, anemia was not present more often or in greater intensity than in similar nonrachitic infants; further, that it was greatly improved by giving large doses of iron. Still, on the other hand, regards anemia as a manifestation of rickets and one that may be altogether out of proportion to the bone changes, and according to Marfan it is an important and characteristic sign of rickets. The most careful observations on this subject have been made by Leonard Findlay, who after examining thirty cases of uncomplicated rickets came to the conclusion that anemia was only exceptionally present and was the result of adventitious causes and not rickets; moreover, he found that the number of red cells and the hemoglobin in the series of cases examined were notably in excess of the normal average.

The not infrequent association of von Jaksch's anemia with rickets has been commented on many times and it may be that there is some connection between the regeneration blood picture of that syndrome and the high red cell count and hemoglobin of Findlay's cases. Of the children in our series, only five showed signs of active rickets and of these only one showed the characteristics of the von Jaksch syndrome, although a degree of splenomegaly was present in four. In all cases the anemia was slow to improve, and from four to six months' treatment was required before the red cell counts approached normal. The number of red cells fell almost in proportion to the hemoglobin percentage, a fact which distinguishes these cases from the simple nutritional anemias and allies them to the anemias due to infective causes.

ANEMIA DUE TO INFECTION

Fifteen of our series of fifty cases showed evidence of infection, but I wish here to refer to only two groups; namely, those due to intestinal and those due to urinary infection.

Intestinal Infections.—It is common knowledge that organisms of the typhoid-coli group produce a hypoplastic condition of the marrow, and that anemia to a greater or lesser degree is always associated with typhoid and paratyphoid. Further, *B. coli* pyelitis leads to a severe anemia, which will be considered later, but there are a few cases in our series which seem definitely to point to an intestinal infection as evidenced by abdominal pain and diarrhea or vomiting, leading to an acute and grave anemia which was characterized by a spontaneous and rapid recovery.

The similarity in history, signs and hematologic observations in these cases were very striking. The onset of the pallor was sudden and accompanied by lethargy. The child was acutely ill, the liver and spleen were enlarged. The blood picture was typical of a severe destruction of red blood cells with an intense

marrow reaction, the circulation being flooded with reticulated red cells, a few nucleated red cells (normoblasts and macronormoblasts) and immature leukocytes. There was a leukocytosis of from 20,000 to 40,000, and the reduction of hemoglobin was almost proportional to that of the red cells. In other varieties of anemia in infancy this high color index is seldom or never found.

Since the stools were not thoroughly investigated it might be contended that these cases were examples of parenteral and not enteral infections, but no evidence of the former was found. Of the cases placed in this group, three had a short and two a more chronic course. One of the patients who recovered rapidly after an intense anemia was a boy of 4 years who was, of course, well above the age for the other forms of anemia peculiar to infants and young children, but yet his illness paralleled in a striking manner that of two other children who were both under a year old.

Infections of the Urinary Tract.—The fact that pyelitis and pyelonephritis of infants may be accompanied by a severe anemia is not, I think, generally recognized, at any rate in England. This is unfortunate because the prolonged milk diet may aggravate an already existing anemia, thereby still further lowering the baby's resistance. Probably every case of chronic infection of the renal pelvis shows some degree of anemia, and in the cases included in this series that degree became very marked; in fact, one patient was admitted as having anemia but, the blood picture being suggestive of an infection, the urine was examined and found to be full of pus and bacteria. In this particular instance, as the pyrexia improved under treatment, there was a steady improvement in the blood count, but such a strain had been thrown on the bone marrow that the child succumbed to a superimposed bronchopneumonia; for although the red cells and hemoglobin percentage rose and the leukocytic count fell from 38,420 to 12,700, the polymorphonuclears were nearly all one lobed and the weighted mean shifted farther and farther to the left, so that there was absolutely no reserve on which to call when the second infection was contracted. The reticulocyte count was low during the whole course of the pyelitis.

THE RELATIONSHIP BETWEEN THE HEMOLYSIS AT BIRTH AND THE ANEMIAS OF INFANCY

There are many other points that have arisen in this study which time will not allow me to deal with. For instance: the relationship between the normal hemolysis which occurs at birth and the anemias of infancy. At one time we fell under the spell of a subtle temptation leading us to think that, depending on the degree of such hemolysis, the infant might be free from jaundice or show either the ordinary icterus neonatorum or icterus gravis neonatorum and probably also intermediate forms between these extremes; further, that the later result of this hemolysis was a degree of anemia, slight in the unjaundiced or neonatal icterus but severe in those suffering from icterus gravis, which persisted in the artificially fed child until after weaning but was cured by breast feeding. The objections to this attractive theory have, however, multiplied; first, no true intermediate cases between simple and grave icterus neonatorum have been found, and they should be frequent if the theory were correct. Secondly, nutritional anemia is of the chlorotic type whereas the anemia which develops after grave icterus is a severe hemolytic form with an intense bone marrow reaction as shown by a high reticulocyte count, large numbers of nucleated red cells, the presence of myelocytes, and a marked leukocytosis. Thirdly, in three of four cases of anemia following icterus gravis the average diameter of the red cells during the anemia was high and gradually fell to below normal as the patient recovered, a condition that does not occur in nutritional anemias. Fourthly, there was no evidence of an undue proportion of instances of icterus neonatorum in children suffering from simple or constitutional nutritional anemias.

It is therefore clear that the anemia following icterus gravis comes under the head of anemia from hemolysis, that it differs from nutritional anemia, and that there is no connection between jaundice at birth and the nutritional type of anemias.

PSEUDOLEUKEMIA OF VON JAKSCH

There is one other point which I must just mention before I close; that is, the question of the existence of the disease known as von Jaksch anemia. In his masterly review of this subject, Cooley says that the English use the term von Jaksch anemia pseudoleukaemica infantum freely, though apparently with some hesitation as to separating it definitely from "infantile splenic anemia," which some seem to consider as distinct from the splenic anemia of later years. British workers speak of von Jaksch's anemia as "splenic anemia of infants" to differentiate it from "splenic anemia of adults," or Banti's disease. The latter syndrome, the existence of which as a special disease is denied by many authorities, is in its early stages characterized by an enlarged spleen, a low red cell count, low hemoglobin percentage and a leukopenia but without any typical cell picture, and in the later stages by hematemesis or melena and an enlarged liver, symptoms that are the result of the development of a cirrhosis of the liver. Although Banti disease is typically found in adults, there are many cases on record in which it has occurred in childhood. I myself have recorded one in a child of 2½ years, and in the present series there is an example which occurred in an infant and caused death at that age.

The clinical syndrome recognized as von Jaksch's anemia is now seen much less frequently than in former years, and I may perhaps be permitted, without producing the evidence in detail, to state categorically that in our investigations we have found nothing to support the view that this is a disease *sui generis*.

Men of a New and Different Type.—In temperament, as in training, the new phase in medicine, as in the other sciences, calls for men of a new and different type. It is no stretch of the imagination to believe that the physician of practice has chosen his calling because of his preference for contact with fellow-creatures; on occasion he becomes a leader; his is the wisdom which springs from a knowledge of men. To exercise authority is natural to him; but, above all else, he is possessed of that indefinable quality which has been designated "art." He who serves the newest of the functions of medicine is cast in a different mold; curiosity is his determining characteristic, his tendency is to be cloistered, his mood welcomes detachment, he is apt to insist on his individuality, he develops a taste for loneliness. Books and the laboratory are his life rather than public occupation and wide acquaintance with men. The difference between the two is real; they represent different psychological types. Naturally the same individual may combine within himself the ability to exercise various functions. Such men are fortunate; to their broad interests medicine furnishes many opportunities.—Cohn, A. E.: Medicine, Science and Art, Chicago, University of Chicago Press, 1931.

ALLERGIC AND INFECTIOUS CONDITIONS OF UPPER RESPIRATORY TRACT IN CHILDREN

DIFFERENTIAL DIAGNOSIS *

MILTON B. COHEN, M.D.
AND
JACK A. RUDOLPH, M.D.
CLEVELAND

Some of the commonest conditions that are seen in children are those which are classified under the general heading of infections of the upper respiratory tract. Among them are included rhinitis, sinusitis, nasopharyngitis, pharyngitis, tonsillitis, laryngitis, tracheitis and bronchitis. All these conditions may be infectious in origin but are frequently manifestations of respiratory allergy, from which they must be differentiated if proper treatment is to be instituted. In addition, many of the true infections are complications of an underlying allergy and cannot be cleared up until the allergy predisposing the mucous membranes to infection is relieved.

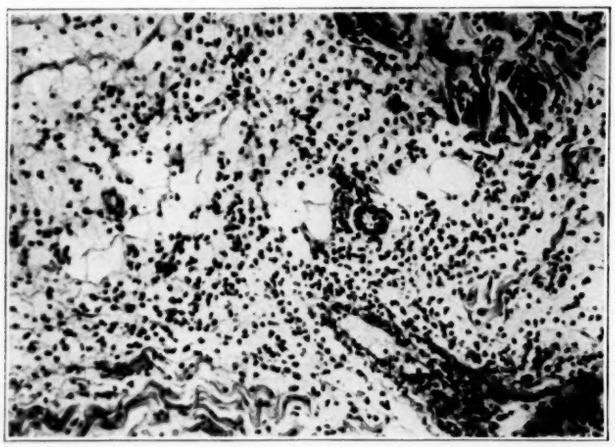

Fig. 1.—Experimental allergy; subcutaneous fat 1.5 cm. below wheal, showing intense edema and infiltration by eosinophils. A patient sensitive to ragweed was injected intracutaneously with 0.1 cc. of 1: 5,000 solution of ragweed pollen; a wheal 4 by 7 cm. was produced. A section of the edge of the wheal and subcutaneous fat was removed thirty minutes later.

Our experience has given us the impression that many physicians do not think of allergy in relation to these conditions unless the symptoms are typical of hay-fever or bronchial asthma, and some even consider typical asthmatic attacks to be infectious in origin because in some children they are accompanied by fever.

Many of the studies of the incidence of primary and recurrent respiratory infections lose their significance because the allergic "colds" are not separated from those which are infectious in origin. For example, last year there was reported before this section a study [1] which revealed that, of 582 children with "colds," 241 had one or more recurrent infections. Of these, 47 were classified as having bronchitis of the asthmatic type and in 43 spasmodic croup was the predominant symptom. Thus there were 90 with more than a suspicion of allergy. It is also interesting to note that while contact with some one with a cold seemed to influence the incidence of primary infections, it had little if any relationship to the incidence of recurrent infections.

Conditions of the upper respiratory tract in children may be divided into three classes; namely, (1) allergic, (2) infectious and (3) combined allergic and infectious. The symptoms in all three types are similar. They are those commonly associated with infections in the nose, nasopharynx, pharynx, etc.; but there are many points in the history, the examination and in the result of therapy which enable one to differentiate between them.

The most important point in the differentiation is to think of allergy.

In the accompanying tabulation we have listed the points of contrast between the allergic and the infectious conditions and have omitted the points of similarity.

Differential Diagnosis of Allergic and Infectious Conditions of the Upper Respiratory Tract in Children

History

Allergic	Infectious
1. Attacks usually recurrent.	1. Attacks usually single.
2. Often mild symptoms between attacks.	2. Usually clears up completely.
3. Definite relation to heredity.	3. No relation to heredity.
4. Not contagious.	4. Contagious.
5. Not related to exposure to another case.	5. Definite relation to exposure to another case.
6. Constitutional symptoms slight.	6. Constitutional symptoms more marked.
7. Foods and inhaled substances often traced as causes.	7. No relation to foods or inhaled substances as cause.
8. Itching common.	8. No itching.
9. Wheezing common.	9. No wheezing.
10. Other allergic conditions present or in past history.	10. Usually no other allergic condition present or in past history.

Examination

Allergic	Infectious
1. Visible mucous membranes, pale, glistening, edematous.	1. Visible mucous membranes, hyperemic, red.
2. Thin watery mucoid nasal discharge, mucoid sputum.	2. Mucopurulent or purulent nasal discharge and sputum.
3. Smear shows eosinophils 10 per cent or more.	3. Smear shows polymorphonuclear neutrophils as predominant cell; eosinophils few or absent.
4. Other signs of allergy often present.	4. No other signs of allergy.
5. Sinus involvement of hyperplastic type.	5. Sinus involvement of purulent type.
6. Wheezing breath sounds.	6. No wheezing breath sounds.
7. Roentgenogram shows bronchial markings increased.	7. Bronchial markings not increased in roentgenogram.
8. Allergic skin reactions usually positive.	8. Allergic skin reactions usually negative.

Treatment

Allergic	Infectious
1. Epinephrine specific for symptoms.	1. No relief from epinephrine.
2. Avoidance of specific allergens followed by relief.	2. Avoidance of food or inhalant substances produces no change.

Combined Allergic and Infectious

Primary allergic conditions are often secondarily infected. Cure depends on recognition and relief of the allergy. The body then overcomes the infection in most cases. This does not preclude treatment for the infection when indicated.

The history of these cases is of the utmost importance. The allergic child usually has a family history of allergy (from 40 to 50 per cent [2]) and has other manifestations of allergy such as eczema, urticaria, gastro-intestinal vagotonia, asthma or hay-fever, either at the time of the examination or in the past history.[3] These conditions are usually absent in the purely infectious types but may be present in the combined types. The importance of the family history is readily seen if one remembers that the studies of Cooke and his associates [2] have shown that, in families in which both parents have allergy, 75 per cent of the offspring of

* From the Asthma, Hay Fever and Allergy Foundation.
* Read before the Section on Diseases of Children at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

1. McLean, C. C.: The Incidence of Recurrent Respiratory Infections in Childhood, J. A. M. A. **95**: 1338-1341 (Nov. 1) 1930.

2. Cooke, R. A., and Spain, W. C.: Studies in Specific Hypersensitiveness: XI. The Familial Occurrence of Hay Fever and Bronchial Asthma, J. Immunol. **9**: 521 (Nov.) 1924.

3. Peshkin, M. M.: Asthma in Childhood: II. The Incidence and Significance of Eczema, Urticaria and Angioneurotic Edema, Am. J. Dis. Child. **32**: 862 (Dec.) 1926.

the union will develop the disease and many will have symptoms before the fifth year.

Attacks due to allergy are usually recurrent, often do not clear up completely but leave a residue of mild symptoms between the attacks, are not contagious, and are not related to exposure to other cases. Most mothers will state that the child has frequent colds at times when other members of the family have none and that the other members of the family escape.

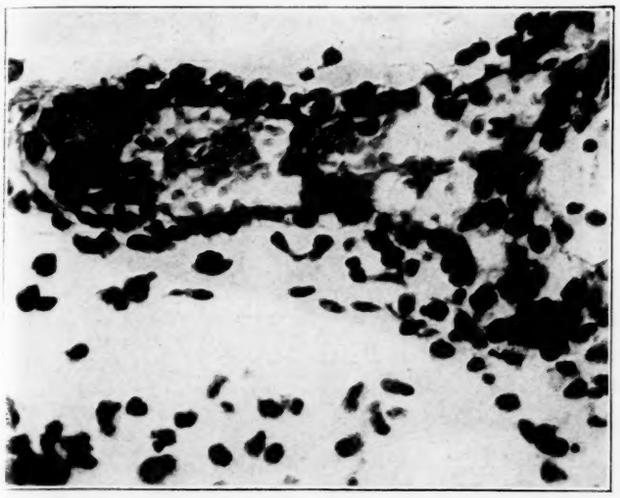

Fig. 2.—Experimental allergy; higher magnification of a blood vessel .5 cm. below experimentally produced ragweed wheal. Within thirty inutes there is margination of the eosinophils within the vessel with heir emigration into the surrounding fatty tissue. This is the specific esion of allergy. As a result of the contact between the ragweed pollen xtract and the cellular antibodies a toxic substance is formed which xerts a specific chemotactic influence on eosinophils. The edema is robably a defense mechanism, an attempt to dilute the toxic material.

Attacks due to infection, in contrast, are usually single since a "cold" confers an immunity of about three months,[4] and in the absence of purulent infectious complications they clear up completely without residual symptoms; they are definitely contagious and are related to exposure to other cases.

Most allergic cases with nasal symptoms present the subjective symptom of itching of the nose, throat or eyes. Those with bronchial symptoms give a history of wheezing. In the absence of a foreign body in the lung or the inhalation of some definite respiratory irritant, wheezing always means that allergy must be ruled out as a cause of the symptoms.

Infectious cases rarely present these symptoms. Frequently the allergic patient will be found to have a definite idiosyncrasy to some food, or the mother will report some definite food dislikes. While psychologic factors for such dislikes must be ruled out, they are frequently significant and every allergist of experience has learned their importance. In addition, Dr. Clara Davis has called our attention to the fact that allergic infants on self selected diets will not eat the foods to which they are clinically sensitive.

Attention to the factors discussed will enable one to begin to separate children with symptoms of respiratory infections into their proper groups. The examination usually makes the differentiation certain. In the allergic cases the visible mucous membranes are pale, glistening and edematous. Frequently the passages are closed by the edema of the turbinates. The mucous surfaces are covered with a thin mucoid discharge. The sputum, if present, is mucoid in character. Smears of the discharge when examined in a fresh state or after staining by Wright's method show a predominance of polymorphonuclear eosinophils.

In the infectious case the mucous membranes are less swollen, more hyperemic and look hot. The discharge and sputum are mucopurulent or purulent, and smears show polymorphonuclear neutrophils as the predominant cell.

It is a safe rule to regard a smear of nasal or bronchial secretion showing 10 per cent eosinophils or more as diagnostic of allergy. Their absence does not rule it out absolutely.

In addition to these easily recognizable signs, many allergic cases show sinus involvement of a hyperplastic type and often nasal polypi. They also show markedly increased bronchial markings on roentgen examination of the chest and usually give positive dermal, intradermal or eye tests when examined with a sufficient number of potent allergens.

The infectious cases with sinus involvement present purulent infections, their bronchial markings are less definite on roentgen examination and tests with allergens are usually negative.

In this connection it is imperative to point out two common fallacies. The first is the diagnosis of sinus disease from cloudiness on the roentgenogram. Sinus visualization depends on the air content. If roentgenograms are made at a time of acute nasal swelling, the ostia of the sinuses will be plugged, the air content of the sinus will be reduced, and a diagnosis of pansinusitis may be made. Shrinking of such a nose, followed by roentgen examination of the sinuses or such examination between attacks, frequently shows the sinuses to be normal.

The other fallacy is overdependence on skin tests. A positive test is a clue, nothing more. Its significance must be determined by clinical experimentation, and such experimentation must be carefully controlled. Often factors of proved clinical significance cannot be determined by testing.

Fig. 3.—Infected nasal mucous membrane, showing the infiltration of submucosa by mononuclear and occasional polymorphonuclear leukocytes. There is no eosinophlia or edema.

If after considering the points in the history and examination one is still in doubt as to the proper classification of an infection of the upper respiratory tract, therapeutic tests may assist in the final diagnosis. The constitutional symptoms of allergy are controlled by epinephrine. Recurrence of symptoms is prevented by avoidance of the offending allergen.

4. Dochez, A. R.; Shibley, G. S., and Mills, Katherine C.: Studies in the Common Cold, J. Exper. Med. **52**: 701 (Nov.) 1930.

The accompanying photomicrographs illustrate the pathologic changes of allergy following the production of an allergic wheal in the skin, a similar process in a bronchus from a fatal case of asthma, and an ordinary chronic infection in the nasal mucous membrane. The allergic processes are characterized by intense eosinophilia, which accounts for their presence in the exudate from areas involved in allergic processes.

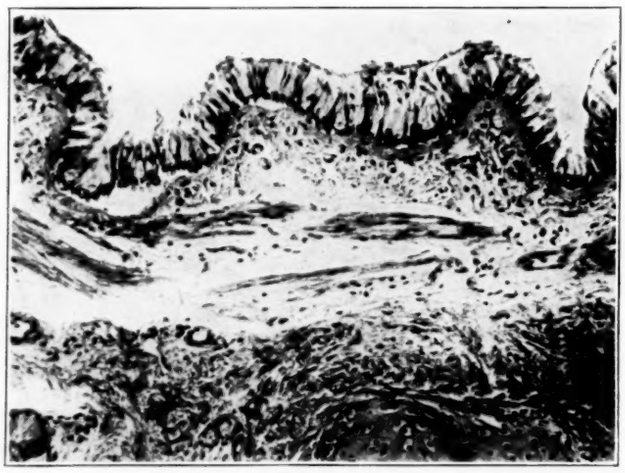

Fig. 4.—A normal bronchus, showing the empty lumen, the thin submucosa and the absence of cellular infiltration.

SUMMARY AND CONCLUSIONS

An attempt has been made by means of tabulations and photomicrographs to demonstrate differences between allergic and infectious respiratory conditions in children which will enable careful clinicians to differentiate between them. This differentiation is essential to the proper care of both groups of patients.

10616 Euclid Avenue.

ABSTRACT OF DISCUSSION

DR. BRET RATNER, New York: Drs. Cohen and Rudolph have brought up a highly significant question in the differentiation of general respiratory conditions from the true allergic. The 582 cases which they studied, indicating that 94 of these cases were allergic, show that there is a certain percentage of conditions that are wrongly diagnosed, and it is these cases that have to be reclassified. The child that sneezes continuously, sneezes in the morning and several times a day, is usually allergic and should be tested. Many cases of recurrent bronchitis and so-called whooping cough are wrongly diagnosed, for often the patients are allergic. In all allergic respiratory conditions there is often a definite history of eczema or so-called exudative diathesis in infancy. An important point in the diagnosis of allergy is its periodicity. One need never make a diagnosis of allergy at the first or second visit. If the condition is allergic, it is going to recur. If a child has an asthmatic attack and it is truly allergic, there will be a recurrence in a month or two. Another important point is the absence of fever. These children apparently seem to have pneumonia. If they have the signs without fever and have typical sibilant and sonorous breathing, they usually are asthmatic. The question of heredity is not as significant as it was previously thought to be. The histories of allergic children show heredity in only about 40 to 50 per cent of the cases, so that in many of these cases the condition is acquired. Epinephrine will relieve most of the allergic conditions in children, and it also serves as a diagnostic measure. However, if a child has terrific dyspnea and one has given a small injection of epinephrine, one should not be too hasty to repeat it. It is much better to tell the mother that, the harder the child breathes, the better for the child. Later one should try to discover the cause of the asthma or hay-fever and institute specific treatment. I should like to add a note of warning; namely, that practically all patients with asthma that have died have died as a result of morphine. I am seeing more and more of these deaths.

DR. ABRAHAM TRASOFF, Philadelphia: I subscribe to what the authors have said with reference to the differentiation between infectious and allergic conditions of the upper respiratory tract. I have had the opportunity to study a number of such cases in the allergic clinic of the Mount Sinai Hospital in Philadelphia and they were typical of the description by the authors. However, I should like to stress the fact that in the allergic type symptoms persist throughout the year regardless of season, sunshine or rain, whereas in the infectious type aggravation is usually marked in the fall and winter seasons. While the appearance of the mucosa of the allergic nose is typical as described, yet, when secondary infection sets in, as it frequently does, it is not as easy of recognition. The allergic type is frequently associated with a seasonal pollen sensitivity. When the proper treatment for the pollen hay-fever is instituted the perennial symptoms clear up. Roentgen examination of the chest in my own experience has not been of much diagnostic value.

DR. ISAAC A. ABT, Chicago: Please tell how you made those nice selections.

DR. C. U. MOORE, Portland, Ore.: I have a son who had repeated colds. The cause of the trouble was not found until allergic skin tests were made and it was found that he was sensitive to veal. About a year later when the tests were repeated he said, "Dad, I notice every time I eat veal I catch cold."

DR. J. A. RUDOLPH, Cleveland: Dr. Cohen and I have made no attempt in this paper to discuss every phase of allergy. We have merely suggested some of the high points in the differential diagnosis of allergic and infectious conditions of the upper respiratory tract. One having made the diagnosis may treat these children properly. We agree with Dr. Ratner on the question of opiates in allergy, particularly in those of the asthmatic type. We have seen deaths due to morphine. We mentioned that fever may or may not be present in these particular cases. It is not a criterion. We have mentioned a large number of factors that may be present, yet not every one of these factors will be present in every case. One must use judgment about every one of these things. With regard to skin tests, it must be emphasized that they are another aid in the diagnosis of allergic conditions. If skin tests are employed together with roentgen and physical examination, one is not likely to become unduly dependent on any one method of diagnosis. I must emphasize here again that one must be a careful clinician first and resort to special tests later.

Fig. 5.—Bronchus the seat of an allergic attack; edema and infiltration of the submucosa by eosinophils. It may be noted that the lumen is filled with mucoid material containing many eosinophils. In the upper right hand corner are plugs of mucus which, when expectorated, can be recognized as Curschmann's spirals and Dietrich's plugs. The dyspnea is due to the mechanical plugging by the exudate.

ECZEMA

FUNDAMENTAL PRACTICAL CONSIDERATIONS *

S. WILLIAM BECKER, M.D.
CHICAGO

Eczema is dermatitis, characterized by vesiculation in a patient who is hypersensitive to the irritative agent.

Disregarding for the moment the factor of hypersensitiveness and concentrating on the clinical aspect, the dermatosis is manifest first as erythema, then as edema. The edema of the epidermis is largely intercellular and gives rise first to microscopic and later to macroscopic vesicles. This process is spoken of as "spongiosis" and is found almost without exception only in the types of dermatitis known as eczema and dermatitis venenata.

If the process continues, the vesicles rupture, fluid exudes from the skin, and one sees the stage commonly known as oozing or weeping. The fluid is an exudate, has a high fibrin content, coagulates on exposure to air, and forms crusts. After a certain time, scaling is seen. Scaling is here due to an abnormality of the keratinization cycle known as parakeratosis and is a sign of subacute or chronic epidermal inflammation.

Continued inflammation beyond this stage causes the skin to thicken, become lichenified (exaggeration of the normal skin lines), lose its elasticity, with subsequent fissuring, and become at times hyperpigmented.

In so-called papular eczema, really papulovesicular eczema, small isolated papules are present, capped by microscopic or macroscopic vesicles. Many cases that have been called papular eczema are neurodermatitis, which differs from eczema clinically and microscopically.

No clinical or microscopic differences exist between eczema, with its element of hypersensitiveness, and dermatitis venenata, or simply dermatitis, as it is often called. This fact, complicated by the employment of such terms as allergy, idiosyncrasy and anphylaxis, has given rise to much contention.

Pusey [1] aptly states:

> When there is a balance between the capacity for resistance of the skin and the insults to which it is exposed, there is a healthy skin. This balance, of course, may be upset by variations of either factor to it; by exposure, on the one hand, to insults beyond the capacity of the normal skin to resist [dermatitis venenata], or, on the other hand, by a lowered resistance of the skin, so that it reacts from insults that the normal skin bears without apparent damage [eczema].

Even the question of hypersensitiveness is not a simple one. It is obviously difficult to establish a deadline at 50 per cent and array the various irritating substances on either side of it, depending on the percentage of persons who would react to the substance, calling the lower half eczema and the upper half dermatitis or dermatitis venenata. The latter is not an ideal term, since it is a far cry from plant or animal venoms responsible for the "dermites vénéneuses" of the French to the various chemical substances responsible for some cases of dermatitis venenata. However, the Viennese "dermatitis ex causa externa" and the French "toxidermie de cause externe" are just as unsuitable,, and "dermatitis venenata" will continue to be used. The entire subject of eczema and allied conditions has been discussed recently by Friedman.[2]

"ECZEMA" VERSUS "DERMATITIS"

It has been argued that it is sufficient to call all dermatitis of the eczema type "dermatitis," and some authors have discontinued the use of the term "eczema." Others denote as dermatitis all cases in which an irritating agent has been demonstrated, and call others eczema. This is scarcely scientific enough, an opinion shared by Highman,[3] and both of the foregoing concepts neglect important biologic factors concerned in the idea of hypersensitiveness, which are necessary to understand the process. For instance, a person puts his hands into pure compound solution of cresol by mistake. The resulting inflammation is of the vesicular type, but a condition of hypersensitiveness does not have to be considered, since every one reacts to this solution, and the inflammation is called dermatitis venenata. The skin improves, but instead of healing completely, it flares up on exposure to mild irritants such as water, soap, dust and dirt. This eruption is now due to hypersensitiveness, belongs on the other side of the deadline and is eczema.

The following case illustrates eczema due to specific sensitization to burweed marsh elder (*Iva xanthifolia*) pollen and the gradual development of nonspecific sensitization:

> CASE 1.—A brick mason, aged 62, had first noted itching of the face in August, 1927. This had been followed by erythematous spots and later by diffuse erythema. He had not noticed vesicles or oozing of the face. The condition persisted for one month. In August, 1928, the same condition appeared and persisted for two months; in August, 1929, it persisted for three months, and it had been present for five months since August, 1930. In August, 1930, a patch of dermatitis had appeared on the right wrist. The patient had had no symptoms referable to hay-fever or asthma. General examination gave essentially negative results. The blood count was normal with the exception of 6 per cent eosinophils. The skin of the face was diffusely erythematous and thickened, producing exaggeration of the skin lines. On the right wrist was a dry crusted and scaling patch of eczematoid dermatitis. A diagnosis was made of recurrent eczema, probably due to sensitization to a fall pollen. The skin was tested by Dr. Harry Huber, with the following results: Scratch tests with fall pollens were negative. Patch tests with fall pollens were negative with the exception of marsh elder, which produced an erythematous, vesicular, oozing and crusting patch. The increasing duration of the dermatitis each year was considered due to the gradual development of nonspecific sensitization, as often occurs in recurrent eczema.

Bloch [4] has shown that quantitative and not merely qualitative factors are involved, not only in irritative manifestations of this form of dermatitis but also in active sensitization to substances such as those which he has derived from primrose leaves. He found that the number of persons reacting to a substance varied as the concentration of the substance and as the number of applications. Klauder and Brown [5] have studied the sensitivity of rabbit skin under varying conditions.

MECHANISM

Cutaneous hypersensitiveness of this type is evidently epidermal, as contrasted with dermal hypersensitiveness in the erythemas, in the dermatitides known as scarlatiniform and exfoliative, and in urticaria. The offending agent may reach the epidermis from the out-

* From the Division of Dermatology of the Department of Medicine, University of Chicago.

1. Pusey, W. A.: The Pathogenesis of Eczema, read at the Eighth International Dermatological Congress, Copenhagen, August, 1930.
2. Friedman, Reuben: Eczema—"To Be or Not to Be . . .", Arch. Dermat. & Syph. **22**: 244 (Aug.) 1930.
3. Highman, W. J.: Pathogenesis of Dermatitis, Arch. Dermat. & Syph. **9**: 344 (March) 1924.
4. Bloch, Bruno: The Rôle of Idiosyncrasy and Allergy in Dermatology, Arch. Dermat. & Syph. **19**: 175 (Feb.) 1929.
5. Klauder, J. V., and Brown, Herman: Experimental Studies in Eczema, Arch. Dermat. & Syph. **11**: 283 (March) 1925; **15**: 1 (Jan.) 1927; **19**: 52 (Jan.) 1929. Klauder, J. V.: Clinical Aspects of Allergy in Dermatology, ibid. **19**: 198 (Feb.) 1929.

side (the usual method) or from the blood stream. Bloch applied quinine externally to a hypersensitive patient and produced local eczema; he injected quinine intravenously into the same patient, with resulting generalized eczema and an asthmatic attack. Whether metabolic products reaching the epidermis through the blood stream may cause eczema is a question. Burgess [6] found that 16.6 per cent of eczematous patients reacted

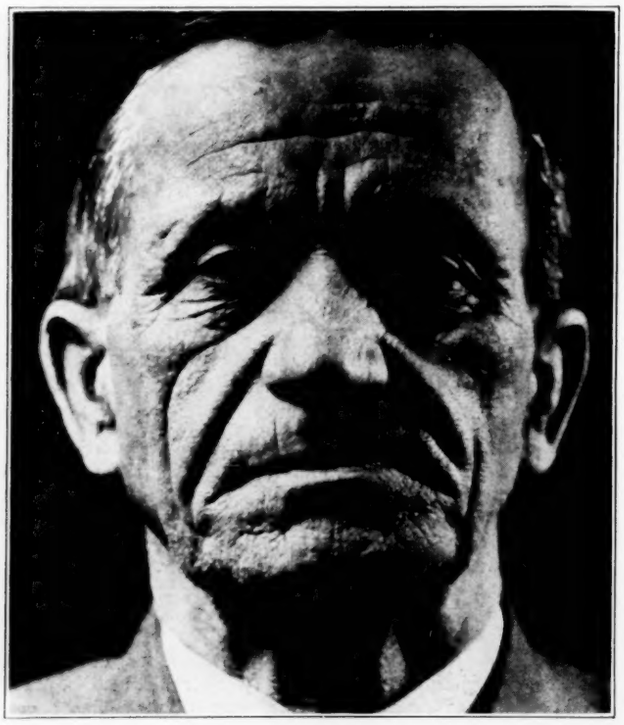

Fig. 1 (case 1).—Recurrent eczema of the face, due to marsh elder pollen; a diffuse eruption.

positively to the percutaneous administration of decomposition products found in the intestine. One should fall back on incrimination of metabolic products only as a last resort, because more and more cases are being solved by diligent search for definite external irritants. The internal mechanism has most likely been evoked too frequently, and the fact lost sight of that the skin is exposed to continual bombardment by physical and chemical agents in the form of pressure, friction, water, either in vapor or liquid form, and dirt and dust with their multitudinous flora. These ubiquitous irritants may perpetuate eczema due to whatever cause, to the bewilderment of patient and physician. A fact too little borne in mind is that it is as impossible to protect the skin from external irritants as it is to put the heart at complete rest. The ability to do this would simplify tremendously the treatment of eczema and many other inflammatory dermatoses.

Infantile eczema is an oozing, crusting dermatitis most often found on the face and scalp but also elsewhere. Skin tests may give a clue to substances which may be proved positive, but cutaneous hypersensitiveness to common irritants is more apt to be the underlying factor.

The actual mechanism of cutaneous hypersensitiveness is not known. Demonstration of antibodies has been made only rarely in eczema, but more frequently in urticaria.

6. Burgess, J. F.: Endogenous Irritants as Factors in Eczema and in Other Dermatoses, Arch. Dermat. & Syph. **16**: 131 (Aug.) 1927.

PITFALLS IN DIAGNOSIS

The diagnosis of eczema would seem to be simple, but there are many stumbling blocks. The first is a lack of critical analysis of the dermatosis itself and the fact that so many patients have already used irritating applications, producing dermatitis venenata and confusing the picture.

Eczema is generally a diffuse eruption, involving moderately extensive areas, often exposed surfaces, such as the hands, the hands and arms (fig. 2), the hands and face or the face and neck. Circumscribed patches are generally neurodermatitis (fig. 3). Various parts of the body differ in sensitivity. A woman with facial eczema was found to be sensitive to the rotogravure section of the Sunday paper, a condition that has been thoroughly studied by Oliver.[7] She could handle the paper without eruptive changes on the hands, but evidently transferred manually the irritating substance to the face, with resulting eczema. Small circumscribed patches of vesicular dermatitis, single or multiple and often with no erythema, such as are found frequently on the fingers and hands, are not apt to be eczema but dyshidrosis. This is a circumscribed vesicular eruption of the lateral aspects of the fingers, often extending to their dorsal and ventral surfaces and the palms. The feet may also be involved. Erythema is absent at the onset but often appears later. Hyperhidrosis is often present. Many of the photographs in Mitchell's [8] article depict cases similar to those which I have called dyshidrosis. This paper is

Fig. 2.—Eczema of the hands and arms; a diffuse eruption.

timely in calling attention to the nonfungous nature of these cases, whatever their ultimate classification will be. The same feature has been brought out by Becker and Ritchie.[9]

7. Oliver, E. A.: Rotogravure Ink Dermatitis, J. A. M. A. **91**: 870 (Sept. 22) 1928.

8. Mitchell, J. H.: Amycotic Dermatoses Simulating Ringworm and Erosio Interdigitalis Blastomycetica, Arch. Dermat. & Syph. **19**: 659 (April) 1929.

9. Becker, S. W., and Ritchie, E. B.: The Rôle of Yeasts in the Production of Superficial Dermatitis, Arch. Dermat. & Syph. **22**: 790 (Nov.) 1930.

The rapidly appearing erythematous dermatitis of various parts of the face and neck, of the flexures of the elbows (fig. 4) and knees (often called seborrheic eczema or seborrheic dermatitis) and of other regions, with no vesicles and generally pruritic out of all proportion to the inflammatory changes, is more apt to be neurodermatitis than eczema. The condition appears often in childhood but may have its onset at any period in life. In discussing this type of dermatitis, Sutton [10] states: "There is a certain localized type of eczema characterized by sudden outbreaks, involving the flexures of the elbows, the anterior axillary folds, and the inner extremities of the shoulders, which I believe belongs to the 'neurotic' group. . . . Another, and not less important group of cases, also occurring in middle-aged women, is the peculiar neurotic type of eczema of the occipital region which is not infrequently preceded by a lichen chronicus simplex." Here are included the "Philadelphia necks" of Stokes,[11] which are probably more numerous in a more trying city such as Chicago. Neurodermatitis may manifest itself in thick lichenified plaques on the arms, legs, back of the neck and coccygeal and other regions. The idea that neurodermatitis is always lichenified is erroneous. I have repeatedly seen both the nonlichenified and the lichenified types in the same patient. The histologic picture of neurodermatitis is one of hyperemia, edema and cellular infiltration but definite vesicles are not found, as in eczema. The constitutional background of neurocirculatory instability necessary for the production of dyshidrosis, neurodermatitis and various other dermatoses has already been discussed.[12] A few of the symptoms are overactivity, restlessness, asthenia and vasomotor instability with a tendency toward low blood pressure and a low basal metabolic rate.

Most cases of nonlichenified, and some cases of lichenified, neurodermatitis of the face and neck are called eczema and are attributed to articles of clothing, such as fur collars. The two eruptions are similar, but eczema is more edematous and is vesicular. The following case is illustrative:

CASE 2.—A woman, aged 37, first seen, Jan. 7, 1930, complained of a pruritic eruption on the neck and upper thorax. It had appeared in October and had been present since that time. A physician had made the diagnosis of eczema and incriminated a new mink coat. She had discarded the coat and had received local treatment with no improvement. She presented an erythematous, scaly, slightly edematous plaque over the anterior and lateral aspects of the neck, extending on to the anterior upper thorax. No vesicles could be seen. Her father had been an energetic, hard working organizer who had founded, and for several years was president of one of Chicago's most important institutions. The patient was hyperactive and overambitious. In order to put herself in fine physical trim, she played thirty-six holes of golf at full speed daily during the entire summer. She became fatigued, and the dermatosis appeared. Her blood pressure was 108 systolic and 78 diastolic, and her basal metabolic rate was minus 7 per cent on the first examination. The irregular appearance of the tracing and my experience with repeated readings on patients as active as this one suggested that her real basal metabolic rate was nearer minus 27 than minus 7 per cent. A diagnosis of neurodermatitis was made. Soothing local applications were combined with restriction of activities and a general slowing up. The dermatitis subsided rather promptly, and a few weeks later she stated that her friends were wondering why she had become so quiet, which showed that she was cooperating. The dermatitis did not recur.

Flexural dermatitis in childhood (located mainly at the flexures of the elbows and knees and at the back of the neck) is often called eczema, or seborrheic dermatitis. Here again one is dealing with neurodermatitis, primary pruritus and then dermatitis, due largely to scratching. These children present the aforementioned constitutional background, with a tendency to vasomotor rhinitis and asthma.

EXTERNAL IRRITANTS

I have stated that most cases of eczema are due to external irritation. The various types of irritants are: Physical, represented by solar eczema; this has been discussed recently by Goeckermann, Osterberg and Sheard [13] and by Greenbaum.[14] Chemical, constituting

Fig. 3.—Exudative eczematoid neurodermatitis. The lesion is sharply demarcated. These lesions generally itch intensively, out of all proportion to their severity.

by far the majority of irritants. A comprehensive list of irritants has recently been presented by Weber.[15] My cases have been largely due to primrose, poison sumac, the rotogravure section of a newspaper, and preparations for the scalp. Under chemical irritants must be included irritating products from the living organisms, such as pyogenic bacteria and fungi. The former are responsible for the type of eczema called infectious eczematoid dermatitis (Engmann), found in areas bathed by purulent discharges and elsewhere. A more common example is dermatophytosis. The fungus lives and propagates in the stratum corneum and gives off its toxin which acts on the living epidermal cells.

10. Sutton, R. L.: Diseases of the Skin, ed. 7, St. Louis, C. V. Mosby Company, 1928, p. 267.
11. Stokes, J. H.: Eczema Problem, Am. J. M. Sc. **179:** 69 (Jan.) 1930.
12. Becker, S. W.: Dermatoses Associated with Neurocirculatory Instability, Arch. Dermat. & Syph., to be published.
13. Goeckermann, W. H.; Osterberg, A. E., and Sheard, Charles: Eczema Solare in a Case of Hematoporphyrinuria, Arch. Dermat. & Syph. **20:** 501 (Oct.) 1929.
14. Greenbaum, S. S.: Dermatoses Due to Light Sensitization, Am. J. Dis. Child. **34:** 81 (July) 1927.
15. Weber, L. F.: A List of Cutaneous Irritants, Arch. Dermat. & Syph. **21:** 761 (May) 1930.

Depending on the sensitivity of the patient, the reaction may be negligible (slight maceration between the toes, generally between the fourth and fifth toes) or it may be markedly erythematovesicular and constitute eczema. The commonest locations are the feet, crural region, genitalia and beneath the breasts in obese women. The toxin may be absorbed locally and produce erythematovesicular dermatitis at a distant point, which must be considered eczematous although it is one form of the so-called trichophytids. This condition is infrequent in my practice, but is often seen in clinics of other countries. Peck [16] has recently written an admirable article on the condition as seen in the Zurich clinic.

TREATMENT

The prime consideration in the treatment of any disease is to ascertain and remove the cause. The difficulties in ascertaining and removing the cause of eczema have repeatedly been emphasized in the literature. An expert anamnesis often unearths one or more possible causative agents, and verification can often be made by means of the patch test.[17] This consists of the simple application of suspected substances. When these are liquids, a piece of muslin about 1 inch (2.5 cm.) square is saturated and applied to the normal skin. This is covered by a piece of oiled silk or paper, slightly larger, which in turn is covered by a still larger single piece of adhesive tape. A solid may be dissolved in water (neoarsphenamine) and the muslin saturated, or it may be made into a paste (building cement) and covered with the impermeable material and adhesive tape. The material may be allowed to remain for twenty-four to forty-eight hours, unless itching or burning is experienced earlier, in which case it may be removed. A positive reaction consists of erythema followed by edema and vesiculation. It is often possible to remove the offending substance from the patient's environment, with subsequent complete relief. In housewives' eczema of the hands, protection can often be obtained by the use of thin cotton gloves, over which rubber gloves are worn. The cotton gloves absorb the sweat and prevent maceration, and should be washed each time they are used. The gloves should be worn not only when the hands are put in water but also when the patient is working in dust and dirt.

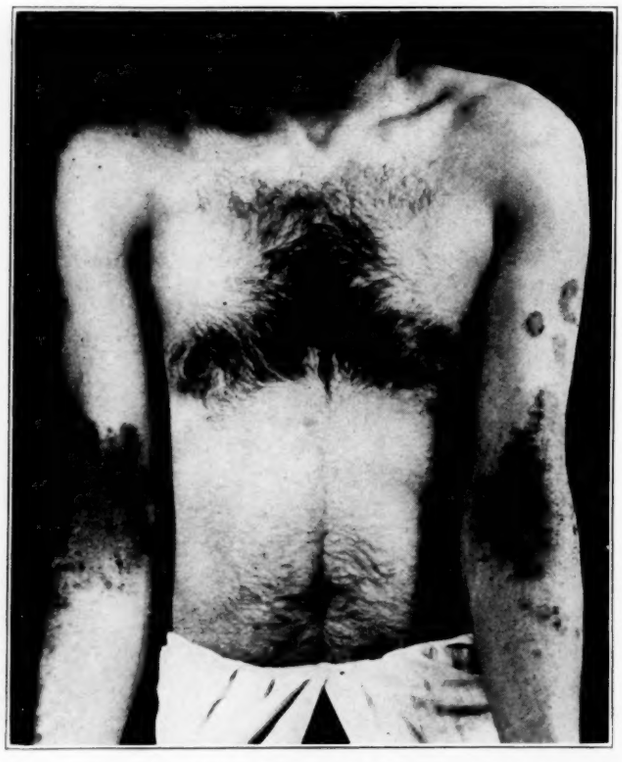

Fig. 4.—Neurodermatitis. This eruption is generally called eczema, but treatment for eczema will not relieve it. The underlying nervous instability and exhaustion must be corrected. This also applies to the condition shown in figure 3.

After the offending agent has been removed or search has been unsuccessful, the question of therapy per se must be considered. Desensitization therapy has been disappointing. Hazen [18] stated that a patient with hay-fever and ragweed dermatitis obtained relief from the hay-fever by desensitization, but dermatitis persisted. The various factors in the relation between allergic hay-fever and asthma and accompanying dermatoses have been discussed before.[12] Urbach [19] is using specific hemialbumose, administered by mouth, with apparent success in some cases.

The chief measures for relieving a patient with eczema are local. The external treatment of eczema is largely protective, since the inflamed skin has lost its normal protective factors (intact superficial layers). A fact too often overlooked is that these patients have hypersensitive skins; otherwise they would not have eczema. I dare say that more patients have perpetuated their eczema by irritating agents, garnered from their own or their neighbor's clock shelf or the corner drug store, or even at times prescribed by physicians, than by failure to remove the primary causative agent. Bloch has shown that patients with eczema are seven times more sensitive to common irritants than are non-eczematous patients.

In the vesicular stage, the wet dressing is the method of choice. Potassium permanganate in the strength of 1 grain (0.065 Gm.) to a pint (475 cc.) of water, prepared fresh twice daily, is the best wet dressing for all purposes. It does not become excessively irritating if inadvertently allowed to dry (as has occurred with aluminum acetate and boric acid) and will take care of any secondary infection. The dressing should not be surrounded by an impervious substance, such as oiled silk or paper, as free evaporation is desired. The dressing should be kept wet but not dripping.

After the more acute signs and symptoms have subsided, a sulphonated bitumen zinc paste may be applied: sulphonated bitumen N.F., 1.8 Gm.; zinc oxide, 15 Gm.; sufficient petrolatum to make 60 Gm. This is applied conveniently with a smooth wooden tongue blade, and about as thick as butter on thinly buttered bread. It is renewed morning and night after gentle removal with olive oil. Water and especially soap should be avoided. The skin may be cleansed by the oil and egg yolk methods advised by Glaze.[20] The paste should be applied even after the skin appears normal, for protection, since many a recurrence has been occasioned by too early withdrawal of treatment. It must be emphasized to the patient that the skin remains hypersensitive for some time after the attack appears to be over. If the patient must work, and objects to his appearance, the paste may be changed to a more agree-

16. Peck, S. M.: Epidermophytosis of the Feet and Epidermophytids of the Hands, Arch. Dermat. & Syph. **22**: 40 (July) 1930.

17. Sulzberger, M. B., and Wise, F.: Ragweed Dermatitis with Sensitization and Desensitization Phenomena, J. A. M. A. **94**: 93 (Jan. 11) 1930.

18. Hazen, H. H.: Allergic Dermatoses, Arch. Dermat. & Syph. **18**: 121 (July) 1928.

19. Urbach, E.: Personal communication to the author.

20. Glaze, A. L.: Two Methods of Washing Eczematous Hands, Arch. Dermat. & Syph. **9**: 621 (May) 1924.

able ointment, such as borated rose ointment (5 per cent boric acid in the official ointment of rose water or similar preparations), which may be applied in a thin coat and still furnish the necessary protection from dust and dirt.

The uncommon type of lichenified eczema must be treated by stronger applications, only after the sensitivity of the skin has been tested by a mild preparation, such as sulphonated bitumen zinc paste. If this produces no inflammatory changes, one may replace the sulphonated bitumen by salicylic acid and pine tar, beginning with 0.5 per cent of each and increasing the strength cautiously.

INFANTILE ECZEMA

Infantile eczema may be treated by wet dressings, followed by sulphonated bitumen zinc paste. A useful adjunct is White's [21] crude coal tar ointment, which may be used even in acute eczema. It should not be used on too large a surface at a time, as there is some danger of absorption of volatile substances from the tar. It may be used on one half of an extensive surface, and sulphonated bitumen zinc paste on the other half. After a few days, they may be reversed. The crude coal tar ointment must be made from prepared tar and strictly according to special directions. Ordinary preparations are often unbelievably irritating and it is a wise precaution to try the tar ointment first on a small area. A factor more important in infantile eczema than in the adult type is the prevention of irritation to the lesions. In many cases the child's arms must be tied in an extended position, and for this and other reasons the treatment of severe infantile eczema is a hospital problem. It is often advantageous to reduce the amount of food, as most of these children are overnourished. Elimination of certain elements in the food may help, but every case is a law unto itself and no definite instruction can be given. Water and especially soap should be avoided locally. Olive oil may be used for cleansing, and colloid water may be used for gently sponging the patient.

DERMATOPHYTOSIS

Hypersensitiveness is often overlooked in patients with fungous infections of the feet. If the eruption is very marked between the toes and extends on to the dorsal surface of the foot as an acute erythematovesicular or exudative dermatitis, it must be treated as acute eczema, which it is, and the fungicidal remedies must be disregarded for the time being. The salicylic acid containing preparations, such as Whitfield's ointment, cannot be used in these regions; Whitfield himself states as much, a fact not sufficiently appreciated. The use of potassium permangante wet dressing for a few days, followed by White's crude coal tar ointment will work wonders with this type of case. Stronger preparations can be used cautiously after the acute dermatitis has subsided. One repeatedly sees dermatitis venenata of the hands following the use of an ointment containing salicylic acid, for an imagined fungous infection. In my experience these eruptions of the hands have proved to be dyshidrosis. Fungous infection of the hands is rare in the Northern states. The fungus must be demonstrated in all cases before a diagnosis of dermatophytosis is made, and even then it may be a secondary invader in a preexisting dermatosis. Difficulties in identification of fungi have been discussed by Becker and Ritchie.[9]

21. White, C. J.: Infantile Eczema and Examination of the Stools, Arch. Dermat. & Syph. **7**: 50 (Jan.) 1923; The Use of Crude Coal Tar, ibid. **12**: 896 (Dec.) 1925; Correction, ibid. **13**: 242 (Feb.) 1926.

The realm of therapy for eczema beyond these few fundamental procedures, including roentgen therapy, concerns only the specialist and is not within the scope of this paper.

Results of therapy are apt to be satisfactory. Some cases are notoriously resistant, but it is my belief that many of these cases are not true eczema but dyshidrosis or neurodermatitis and that they will yield to appropriate measures directed to these conditions. The general health of the patient should, of course, receive attention and any abnormality should be corrected. The various factors to be considered are given by Stokes.[11]

SUMMARY

A concept of eczema is presented which I believe will withstand scientific scrutiny. Some of the pitfalls in diagnosis (and consequently in therapy) are given.

Fundamental principles of treatment based on this concept are given which will be sufficient in a majority of cases.

The term "eczema" refers to a definite class of inflammatory dermatoses and may well be retained in dermatologic nomenclature.

INDICATION FOR AND LIMITATIONS OF BIOPSY IN ABOUT FIVE HUNDRED DERMATOLOGIC CASES *

FRED M. JACOB, M.D.
AND
T. R. HELMBOLD, M.D.
PITTSBURGH

The decision as to whether or not tissue should be removed for microscopic examination in a given dermatologic case involves a number of questions. The matters of scar, pain and discomfort, objection on the part of the patient, dissemination of the process involved and, finally, the question of the amount of information to be obtained by microscopic study of the tissue are all to be considered. One finds in the analysis of a series of cases that the opinion of the microscopist is about equal to that of the clinician in that certain cases are typical microscopically but obscure clinically, whereas the reverse is true in another group. The pathologist thus makes an excellent consultant, being the authority in some cases and in others corroborating the diagnosis only by correlation of the histologic and clinical picture. In inflammatory processes this correlation is of the utmost importance. The microscopist either will be led far afield or can only return a diagnosis of acute and chronic inflammation in most cases. Granulomas also are a difficult field microscopically, but here other laboratory procedures are of great assistance. In tumors the pathologist is probably more valuable than in any other group, but even here the clinical picture and progress afford sometimes the chief diagnostic sign. We have found, even in tumors with good choice of material, that occasionally when the clinical picture does not conform to the microscopic examination further study of the tissue frequently proves clinical evidence to be sound. Repeated biopsies were sometimes necessary for various reasons, such as to prove the first diagnosis on account of poor choice of material and to show the efficacy of treatment. How-

* From the Department of Dermatology, University of Pittsburgh School of Medicine.

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ever, in spite of various objections we believe that in a vast number of dermatologic conditions biopsy is desirable from the standpoint of the physician and justifiable and valuable from the standpoint of the patient. As mentioned by MacKee and Stone,[1] careful removal of tissue works little or no hardship on the patient, and, as shown by Bruecken [2] in general pathologic work, microscopic study of a lesion is a more valuable procedure to the patient in many cases than is complete destruction of the lesion and thus of the evidence by one of the newer procedures so popular now in dermatologic practice.

Removal of tissue used in this series of cases was either by electrical cutting or by the use of the circular knife, 0.5 cm. in diameter. We found the cutting current very valuable in large lesions, particularly in those to be removed as nearly as possible completely, but in smaller lesions the charring was too great to assure good histologic material. In the smaller lesions the half centimeter circular knife gave ample material for study. In cases of malignant or suspected malignant conditions, any cutting procedure was followed by charring, in deference to the opinions of many men who believe that the pathologic process may be disseminated in this way. X-rays or radium was used, usually immediately, and always as soon as a diagnosis of a malignant condition was made, to prevent possible dissemination of vital tumor cells. Sections were always studied both by a general pathologist and by a dermatologist, who after a study of both clinical and microscopic observations were in the majority of cases able to arrive at a satisfactory conclusion. The accompanying tables will give an idea of the material studied.

EPITHELIAL TUMORS

Our tables of epithelial tumors may be misinterpreted on account of the large percentage of cases not diagnosed before biopsy. These tumors were nearly all clinically diagnosed as malignant but not designated as certain types unless there was sufficient clinical evidence to make a definite diagnosis. We agree with Reimann [3] that, in epithelial malignant processes on the skin surface, differentiation clinically is chiefly a matter of metastases, and even in some epidermoid cases of low malignancy these may occur quite late. However, cases extending over a period of from five to twenty years and in one case thirty years, without metastases, were, we felt, certainly not epidermoid. One man, however, with an extensive superficial lupoid carcinoma of two and one-half years' duration, completely involving the face and neck, showed no metastases. Several sections from different areas all showed epidermoid carcinoma. We found, as did Owen [4] in her series of more than 800 cases, that malignant conditions of the mucous membrane were practically always epidermoid in type. We had one case of adenoma of the roof of the mouth of very low malignancy, but all others on oral mucosa were epidermoid carcinoma. The majority of mouth tumors were definable on metastases as well, for it was the unusual case that presented itself before the tumor had made considerable progress. Mixed cell tumors are impossible to diagnose clinically and require very careful microscopic study. Although found in only a relatively small percentage of cases they should be kept in mind because their very high grade of malignancy makes an early diagnosis of vast importance in regard to both prognosis and treatment. We found this type present in about 5.25 per cent of cases in this series, which is a somewhat smaller percentage than was reported by Montgomery.[5]

We found early diagnosis to be of great value in the care of these cases, as some time ago one case presenting a mixed cell tumor of the lip, in which progress seemed satisfactory, went on to a fatal termination by neglect of treatment for a relatively short time. Five cases of lip carcinoma showed nodular cystic masses of the lower lip. Superficial destruction was not very great, and numbers of pus exuding sinuses were present in the growth. These cases bore a great resemblance to mycotic granulomas but cultures were always negative. Most cases of granuloma can be diagnosed by other procedures, but cases such as these show the value in time saving of early biopsy. Epidermoid carcinoma was the pathologic diagnosis in all, but on account of the resemblance of these to actinomycosis, several studies were made to be certain that we were not deal-

TABLE 1.—*Malignant Tumors*

	Diagnosed Before Biopsy	Not Diagnosed Before Biopsy
Carcinoma		
(*a*) Basal cell	5	54
(*b*) Epidermoid	55	84
(*c*) Adenocarcinoma	..	1
(*d*) Transitional (mixed)	..	11
(*e*) Paget's	2—(1–?)	..
(*f*) Cutaneous horn	3	..
Sarcoma		
(*a*) Myxosarcoma	..	1
(*b*) Fibrosarcoma	2	8
(*c*) Lymphosarcoma	..	1
Melanoma	6	4
Hemangio-endothelioma	..	7
Leukemia cutis	1	..
Hodgkin's disease (glands)	..	9
Mycosis fungoides	4	1

TABLE 2.—*Epithelial Tumors*

	Epidermoid	Basal Cell	Transitional
Face			
Forehead	7	12	..
Lip	*	3	1 mm.
Eyelid	5	2	4
Cheek	16	6	1
Chin	1	2	2
Ear	8	5	2
Nose	11	5	..
Scalp	5	10	..
Temple	2	1	..
Lower jaw	1	..	..
Cervical lymph node	1	..	..
Other Skin Areas			
Penis	1	..	..
Back	..	3	..
Neck	5	4	..
Ankle	2	..	..
Leg	3	..	..
Nipple (Paget's)	2 (1–?)	..	..
Mons veneris	..	..	1
Foot	1	1	..
Shoulder	..	1	..
Hand (dorsal surface)	13	..	..
Thumb	2	..	..
Abdominal wall	1	..	..
Groin	1	1	..
Wrist	..	1	..
Axilla	..	1	..
Chest wall	..	1	..
Mucous Membranes			
Tonsil	1	..	..
Tongue	4	..	..
Labia majora	2	..	..
Buccal	2	..	..
Gingiva	3	..	..
Glans penis	2	..	..
Hard palate	2	..	..
Soft palate	2	..	..

* 15 skin-23 mm.

1. MacKee, G. M., and Stone, M. J.: Surgery in Dermatologic Practice, J. A. M. A. **95:** 1315 (Nov. 1) 1930.
2. Bruecken, A. J.: Pennsylvania M. J. **33:** 445 (April) 1930.
3. Reimann, S. P.: M. J. & Rec. **131:** 449 (May 7) 1930.
4. Owen, May: Basal Cell Carcinoma, Arch. Path. **10:** 386 (Sept.) 1930.
5. Montgomery, Hamilton: Basal Squamous Cell Epithelioma, Arch. Dermat. & Syph. **18:** 50 (July) 1928.

ing with pseudo-epitheliomatous changes, which are very common in this and other granulomas. Four cases remained for treatment after confirmation of the diagnosis, and all showed satisfactory progress. Approximately a year later, two were sectioned again on account of the nodular character of a portion of the scar. One showed reactivity which was promptly stopped, while the other showed only inflammation. We have found examination of scars of tumors to be of value in several cases, sometimes when removed for suspected activity and other times when removed to obtain a better cosmetic result. We believe from our studies of tumors that it is in this field that the microscopist is of the greatest value, his opinion being often more reliable than clinical observation, but cooperation, particularly in the selection of material, is very necessary.

OTHER EPITHELIAL HYPERTROPHIES

Pseudo-epitheliomatous hypertrophy was found in several cases. In one the microscopic diagnosis was easy. In two others the diagnosis of malignancy was suggested, but the clinical picture did not conform to this opinion. One proved on further study of the tissue and later by blood count to be lymphatic leukemia of the skin, and the other was a chronic dermatitis of the skin of the leg. Others occurred in granulomas, factitious dermatitis and other types of ulceration. Four cases showing clinical characteristics of sebaceous cyst proved to be basal cell carcinoma resulting from malignant degeneration of some part of the cyst. Three other cases with the same clinical diagnosis proved to be epithelial cysts following injury with the implantation of epithelial cells in the subcutaneous tissues. One curious cyst, 1 cm. in diameter, was found on the tip of the index finger following a puncture wound, another following an injury to the back of the hand, while a third resulted from a hypodermic injection in the back.

TABLE 3.—*Benign Tumors*

	Diagnosed Before Biopsy	Not Diagnosed Before Biopsy
Pseudo-epithelioma	..	5
Multiple benign cystic epithelioma	2	4
Hemangioma	10	2
Lymphangioma	2	..
Lipoma	13	4
Angiolipoma	..	2
Fibroma	8	9
Fibro-adenoma	..	1
Adenoma	..	1
Papilloma	3	3
Xanthoma	2	3
Sebaceous cyst	7	1
Myxoma	..	1
Mixed tumors	2	2
Epulis	..	7
Warts	12	7
Keloids and scars	8	13
Dermoid cyst	..	3
Neuroma	2	..
Papillary cyst adenoma	..	1
Lymphoma	3	..
Nevi	29	..
Acanthosis	1	..
Epithelial cyst	1	3

MELANOMA

Ten cases of melanotic tumor were studied in this series. They were all of the highly malignant type described by Ewing[6] as true melanoma. One was extremely difficult to classify on account of the difficulty of eliminating epidermoid carcinoma as a factor. This case did not conform to Ewing's description completely, but we believed that either the epithelial invasion of the subcutaneous tissue was passive and secondary to the pressure of the melanoma, or it was a condition similar to pseudo-epithelioma, as described by Weidman.[7] Seven of these tumors had their origin on some part of the foot; the breast, cheek and sacral region were the seat of primary growth in the other three. Five were diagnosed from biopsy of the primary lesion, and five were diagnosed in the secondary growths some time after the primary tumor had been incompletely destroyed elsewhere. Unfortunately only one case was early and showed a willingness to submit to radical treatment. On the plantar surface of the instep of the right foot, a woman, aged 56, had a pigmented mole, which had begun to enlarge some weeks before examination. Wide excision was done, the incision extending as deep as possible. Section showed definitely a malignant type of melanoma. The surgeon after a frank discussion of the case with the patient received consent to amputate the leg below the knee. This was done eight months ago, and to date there has been no evidence of recurrence or metastasis. This is the only case of this series in which we have had any hope for a favorable result. In two other cases, in which pigmented tumors were removed, the bases were charred, and heavy x-rays applied showed fairly prompt recurrence. In both these cases, biopsy had shown the benign characteristics of the growths and we were able to reassure the patient and the referring physician that the prognosis was favorable. In both cases a second complete removal effected a cure. We believe from these experiences that biopsy is very important in pigmented tumors, because radical measures are necessary in the highly malignant types of growth; but, unless this malignancy is proved, one is not justified in subjecting the patient to the mutilation which results from radical surgical procedures. Basal cell tumors and warts at times contain many pigmented cells but have not the true melanomatous characteristics and are usually easily eradicated.

TABLE 4.—*Granulomas*

	Diagnosed Before Biopsy	Not Diagnosed Before Biopsy
Tuberculosis		
Ulcer	5	2
Verrucosa cutis	1	..
Orificialis	2	..
Tuberculosis of the hypoderm	2	4
Lupus vulgaris	1	1
Acnitis	2	1
Adenitis	3	7
Syphilis		
Gummas	2	9
Papule	..	1
Condylomas	3	1
Other Granulomas		
Sarcoid	1	..
Granuloma annulare	1	..
Actinomycosis	1	..
Blastomycosis	..	1
Sporotrichosis	3	..
Allepo boil	1	..
Coccidiomycosis	..	1
Granuloma inguinale	1	1
Paraffinoma and other foreign body granulomas	..	9
Granuloma	..	6
Tularemia	2	..

GRANULOMAS

In granulomatous processes we found microscopic examination of tissue to be most difficult and in the majority of cases to be the least helpful means of diagnosis at our disposal. History, clinical appearance, blood and bacteriologic examinations were often of far greater value than biopsy. However, in a few cases a

6. Ewing, J.: Brit. M. J. **2**: 852 (Nov. 22) 1930.

7. White, Cleveland; and Weidman, F. D.: Pseudo-Epitheliomatosis Hyperplasia at the Margins of Cutaneous Ulcers, with Especial Reference to Histologic Diagnosis, J. A. M. A. **88**: 1959 (June 18) 1927.

typical microscopic picture is found and diagnosis by this means is possible. We have in several cases been given the correct diagnosis even of syphilis, when all other attempts to elicit other manifestations or history of syphilis were of no avail. In some granulomatous ulcerations we have encountered the pseudo-epitheliomatous proliferation, and here the selection and careful study of material is extremely important.

In spite of all these facts, we believe that biopsy is justified in granulomas even though it occasionally is of no great assistance. The processes are destructive in themselves, so that there will be only a slight increase, if any, in the scar, and, with proper after-care of the wound, dissemination of the infection will not result. Small biopsies were our rule in these cases, as the majority of granulomas can be made to recede without the use of destructive measures. In this group of cases, which are so baffling, we found that pathologic consultation with a complete review of clinical observations was both interesting and helpful.

TABLE 5.—*Inflammations*

	Diagnosed Before Biopsy	Not Diagnosed Before Biopsy
Lupus erythematosus	2	2
Papulonecrotic tuberculid	2	..
Rheumatic nodule	1	..
Erythema multiforme	4	..
Erythema nodosum	3	..
Lichen planus	6	..
Psoriasis	..	3
Urticaria pigmentosa	3	..
Prurigo nodularis	1	..
Pityriasis rubra pilaris	1	..
Bromiderma	3	..
Epidermolysis bullosa	3	..
Scleroderma	1	..
Molluscum contagiosum	1	..
Granuloma pyogenicum	4	1
Granulation tissue	..	2
Gingivitis	..	3
Acute and chronic inflammations	5	15

INFLAMMATIONS

Inflammatory processes of the skin, both acute and chronic, form the difficult field for the pathologist. Save for a relatively small number of cases in which a typical microscopic picture is found, the observations of the clinician are of greater value than those of the pathologist. Consultation between these two with a review of both clinical and microscopic observations is of great benefit to both.

TABLE 6.—*Other Conditions*

	Diagnosed Before Biopsy	Not Diagnosed Before Biopsy
Pemphigus	2	..
Dermatitis calorica	1	..
X-ray dermatitis	3	..
Leukoplakia	1	2
Keratosis palmaris et plantaris	1	..
Erythrodermia ichthyosiforme congenitale	1	..
Progressive pigmentary dermatosis	1	..
Hemochromatosis	1	..
Pilonidal sinus	1	..
Cervical auricle	1	..
Lymph node	2	..
No diagnosis	1	..

The problem of histology in dermatologic practice is sometimes a difficult one. In certain conditions, particularly neoplasms, biopsy is essential. However, in inflammatory and granulomatous processes, particularly those in which the picture is not typical, great difficulty is sometimes encountered in the search for microscopic information of value. To become an expert in dermatologic histology requires, among other things, a great deal of time, which is not always available for the practitioner. General pathologists, unless their interest is stimulated, are prone to view dermatologic pathology lightly. We believe that frequent consultation between the clinician and the general pathologist will aid each greatly, particularly when each realizes the many difficulties by which the other is confronted.

7026 Jenkins Arcade—South Side Hospital.

ABSTRACT OF DISCUSSION

DR. HAMILTON MONTGOMERY, Rochester, Minn.: Frequently, when biopsy is made, the dermatologist is considering several differential possibilities. If these are kept in mind, a site will be selected for biopsy which will be most likely to portray the conditions under consideration. Thus, when mycosis fungoides is suspected, biopsy should be made from an indurated plaque rather than from an early lesion; in hematogenous tuberculosis an old lesion should be selected if one is searching for a tuberculoid structure and an early lesion if one is searching for the bacilli. In a granulomatous or fungating process, biopsy should not be made from the edge of an ulcer or sinus, as the histopathologic picture is likely to prove noncharacteristic. In malignant growths, biopsy from the advancing margin is more likely to reveal the true character of the disease. The dermatologist, therefore, must indicate the exact site for biopsy rather than leave this to an unexperienced assistant. A definite technic for taking biopsy should be established and the pathologic technician instructed regarding certain fundamentals necessary to obtain good histologic sections of the skin. At the Mayo Clinic we found that the Bard Parker knife with its razor-like edge and interchangeability of blades permits removal of tissue for diagnosis with the least amount of pain and permits close approximation of the edges so that only a fine linear scar results. It also permits removal of normal tissue for control. There is little danger of dissemination of epitheliomas from superficial skin biopsy. When, however, a diagnosis of melanoma is considered, I believe that the lesion should be widely excised and the diagnosis confirmed at the time of excision by frozen sections. Basal cell epithelioma and verruca senilis may show deposits of melanin pigment and should not be confused with melanoma. The authors found less than one-half the percentage of transitional epithelioma (basal squamous cell epithelioma) in their series of cases compared with mine; but the personal equation enters into the interpretation of these transitional lesions. The fundamental point is that basal cell epithelioma can, through metamorphosis, give rise to basal squamous cell or squamous cell tumors. In my experience, pseudo-epitheliomatous hypertrophy can usually be distinguished from true malignancy. The former is seen especially in tertiary syphiloderms and bromoderma. In addition to the conditions mentioned by the authors, biopsy is often of value in pigmentary disturbances of the skin, as by suitable staining together with the histopathologic changes a definite diagnosis is often possible. Finally, biopsy in exfoliative dermatitis may establish an etiology of psoriasis or arsenic (through the use of Osborne's method) or of one of the lymphoblastomas.

DR. FRED D. WEIDMAN, Philadelphia: In my capacity as laboratory director, perhaps I can be of most service by mentioning constructively a few mistakes made by clinicians sending material to pathologists. In the matter of selection, one should not pick the most spectacular lesion, i. e., the bloodiest and largest, but a lesion in the midstage of the disease process. One should not pick one in which sloughing has occurred with necrosis in the center, for in such a lesion most of the diagnostically important process is destroyed. In ulcerated lesions, one should always select the peripheral part and remove at least that zone where the permeative processes of the granuloma or tumor may lie, intermediate between the normal and the diseased tissue. Commonly biopsy specimens are not taken deeply enough. In therapeutic procedures, the coagulating current has introduced a new complexity. In a sufficiently small lesion the coagulation which admittedly destroys the edge of the lesion will certainly produce necrosis, or at least modification of the

entire lesion which is now sent for examination and diagnosis. That is one criticism of this technic, by and large, from the point of view of laboratory diagnosis. In interpreting these sections, one should keep in mind that the necrosis in the periphery of the section will not be part of the pathologic changes. Another thing that will modify the histologic interpretation is the preceding treatment, particularly radiotherapy. All know that the roentgen ray produces differing effects, depending on the quality of treatment. One gets hyperplastic epidermal effects as early results, and in later stages the fibroses, contraction of blood vessels, and so on. In submitting material for histologic study, one should always state whether treatment has been applied, what kind, and how much. When submitting material for analysis one should not be stingy with clinical information. Only too frequently the pathologist cannot get the clinician anywhere diagnostically, particularly in nonspecific inflammatory dermatoses. This is because there are numerous dermatoses which at one stage or another will resemble one another; yet it often happens that a little help from clinicians as to the appearance of the disorder, and the particular lesion taken, whether early or late, may make the difference between an unsatisfactory report and a satisfactory one. The pathologist is not a superman merely because he has a microscope. Reciprocity between clinician and pathologist is essential to optimal results.

DR. FRED M. JACOB, Pittsburgh: The word epidermoid was used principally on account of the pathologists. It seems that this is the word they have chosen to signify squamous cell or prickle cell carcinoma.

RADIATION THERAPY OF CARCINOMA OF THE RECTUM *

IRA I. KAPLAN, M.D.

Director, Division of Cancer, Department of Hospitals; Radiation Therapist, Bellevue Hospital; Clinical Professor of Surgery, New York University and Bellevue Medical College

NEW YORK

Carcinoma of the rectum constitutes one of the most interesting studies for the radiation therapist, because when a patient suffering from this condition is sent for irradiation it is usually with a gesture of despair, since the results from treatment of every kind have not been any too encouraging. According to Miles,[1] this form of cancer occurs in one third of all the cancers affecting the body, while Hoffman states that rectal cancer stands third on the list of cancers of the intestine causing death. To a limited extent and in a chosen group of cases, surgery offers a very good chance for cure. The type of case chosen for this group, however, is that in which the lesion is limited to the rectum, without extension to the surrounding structures. Such cases, Yeomans [2] states, are uncommon, and usually those referred for irradiation are inoperable, being almost always those in which the lesion is no longer limited to the mucosa of the rectum but involves all the adjacent tissues and lymphatic drainage areas.

The question as to when a rectal lesion is early or late is not easily answered, for the anatomic condition of the lesion may sometimes be quite extensive, with very few symptoms apparent to the patient, whose statement therefore as to when the lesion began may not fix the time correctly at all. Miles has made some special studies of the rate of growth of a rectal lesion, according to its situation in the canal. From his observations a lesion involving the mucosa near the ampulla takes about eighteen months to grow around the lumen of the intestine. On account of this slow growth it is not uncommon to have a patient first learn of a malignant lesion of the rectum following a general examination, even though he has heretofore had no symptoms referable to this part of the body. Or, a patient may have had "piles" for many months or even years with only slight symptoms, and yet on examination an extensive lesion may be found. A small lesion of a fungating character may give severe symptoms, thus calling attention to its presence in an early stage, and it is to the latter type that surgery offers the best chance for cure. Still, any rectal surgical procedure must, according to Miles, be radical to be at all effective. In spite of the fact that radical operation is borne especially well by young patients, Yeomans says that recurrence is usual. He states that in his series approximately 50 per cent of rectal cancer cases were operable. Operability, he says, varies with surgeons according to their own selection of cases. Cutting,[3] too, says that operability depends on the individual opinion of the surgeon. In all our cases the symptoms had existed for more than six months.

The anatomic situation of the rectal tumor plays an important part in any plan of therapy. A lesion on the outer surface of the anus is treated quite differently from one situated at or around the sigmoid section of the colon. Ewing [4] states that the rectum is the most frequent site of cancer of the large intestine. Miles says that rectal cancer is most frequently situated at the rectosigmoid junction, while, according to Turner,[5] 65 per cent of all rectal tumors occur within reach of the examining finger. At the Mayo Clinic, Bowing [6] reports, the majority of cases showed the lesion situated in the lower third of the rectum, while Yeomans states that the site of the lesion occurred in his series as follows: anorectal, 29; rectal, 212; rectosigmoid, 37, and sigmoid, 42. In our series, fifteen lesions were in the lower rectum, two around the anus and one at the sigmoid.

The relationship of this portion of the intestine to the surrounding lymphatic drainage system is important. The lesions around the anus, being most likely epithelial, drain through the superficial, and those directly in the rectal canal through the pelvic, lymphatics. Miles describes three groups of lymphatics for this portion of the rectum, the intramural, intermediary and extramural, thus accounting for the widespread involvement in advanced cases. Accordingly, any procedure necessary in caring for a rectal cancer must include treatment of the areas which are served by those lymphatic channels, and, of course, radical surgical procedures must include complete removal not only of the local lesion but also of that tissue to which, as experience has proved, cancer is prone to spread.

Since blockage of the intestine depends on the amount of tumor growth in its canal lumen—and according to Miles this is usually a condition incident to a long-standing growth—the question of when colostomy is indicated is a debatable one. Whether an immediate colostomy should be done is not answered by all operators alike. My associates and I have felt that, in cases in which some passage is possible for bowel

* Read before the Section on Radiology at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 11, 1931.

1. Miles, W. E.: Surg. Gynec. Obst. **52**: 350 (Feb., number 2A) 1931.
2. Yeomans, F. C.: Proctology, New York, D. Appleton & Co., 1929.
3. Cutting, R. A.: Am. J. Surg. **10**: 255 (Nov.) 1930.
4. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1928.
5. Turner, G. G.: Surg. Gynec. Obst. **52**: 273 (Feb., number 2A) 1931.
6. Bowing, H. H.; Fricke, R. E., and Smith, N. D.: Radiology **13**: 443 (Nov.) 1929.

movement, it is advisable to postpone making an artificial anus unless radical resection of the rectum is contemplated. We believe that the mental condition of the patient is very much helped if an artificial anus is avoided and drainage can be maintained without pain. Irradiation can be carried on without colostomy. In our series of eighteen cases only five colostomies were done, four before irradiation.

The method of radium therapy that today commands almost universal approval is the one first elaborated by the Curie Institute in Paris; namely, radium treatment of lesions with small doses of radiant energy over an extended period. Regaud states that in the treatment of any local lesion two factors must be considered: destruction of the malignant process and preservation of the normal surrounding tissues. To carry out this plan he advises the use of as pure a gamma ray as possible, and this is obtained by the employment of heavy filtration for the radium applicators, which are applied in such a manner as to do the least possible mechanical harm to the surrounding tissues.

Formerly we employed the method of intratumoral implantation of radium in the form of tubes or needles, as used by Quick,[7] Binkley,[8] Bowing,[9] Gordon-Watson,[10] and others. Bearing in mind, however, the usual resulting ulceration incident to the puncture method of irradiation, we felt that, if we were to apply the same sort of irradiation as has proved so valuable in the treatment of cancer of the cervix and body of the uterus, we would succeed in enhancing our results in connection with cancer of the rectum and as a result we have devised the present system of treatment.

The method of procedure is divided into four parts: (1) general constitutional, (2) high voltage roentgen treatment of the pelvis and lymphatic drainage areas, (3) radium treatment directly to the lesion, and (4) postradiation treatment.

Because of the pain associated with the rectal lesion, most patients are averse to having bowel movements, while others may suffer more or less from diarrhea; generally, they are weak, thin and dehydrated. To correct this condition, general and bowel hygiene is instituted daily, rectal lavage is given, and liquid petrolatum is administered by mouth. The patient is advised to take frequent meals of soft foods with high caloric value, and plenty of fluids are insisted on while the hygiene treatment is being carried out.

In the administration of high voltage roentgen therapy to the pelvis, the x-rays are directed through two anterior and two posterior pelvic fields and a perineal portal. The amount given to each area is from one to one and a half full erythema doses in quarter doses per treatment, one or two areas being treated daily, depending on the condition of the patient. Following this roentgen therapy, radium is applied to the rectal lesion. If the lesion is on the surface superficial to the anal canal, irradiation is either by the intratumoral method of implanting the radium into the lesion or by applying a surface mask thereto. When the lesion is in the rectal canal, the technic is as follows: A specially designed rubber rectal applicator [11] is prepared, containing the radium element in heavily filtered metal tubes. This rubber applicator has a central hollow core to allow for drainage of bowel fluids, cleansing, and escape of bowel gas. The inserted tip is of soft rubber and the rear end has a hard rubber connecting tube for attaching to an enema bag or to additional rubber drainage tubing, should the applicator be used high up in the rectum. The outer rubber shell is fenestrated at equal distances, to hold nine tubes, from 20 to 35 mm. in length and up to 5 mm. in diameter. A protective rubber sleeve is rolled over the bougie after the tubes are placed in the fenestras and this holds the radium in place. When the applicator is ready for insertion into the rectum, it is wound in puttee style, with a strip of 2 inch iodoform gauze, the end nearest the hard rubber outlet being slit so as to form two strings (like apron strings) which are tied over the tube in a large knot, with the long ends hanging loose for later use. After the tube is loaded, and wrapped with iodoform gauze, it is well greased with petrolatum and inserted into the rectum. Should the canal be blocked, it is dilated, sometimes a partial removal of tumor tissue is done, and the applicator is pushed in place. The long streamers of iodoform gauze are then strapped tightly with adhesive tape to each groin, and the knot on the tube is pushed in just behind the sphincter, which holds the tube in place. The number of radium tubes to be used and the dosage to be given depend on the position and type of the lesion being treated. While the tube is in place, the patient experiences but little discomfort, the hollow canal in the applicator allowing for the release of bowel gas and drainage.

Cases Treated by the Present Method (1929-1930)

Number of cases		18
Males		5
Females		13
Youngest		25
Oldest		69
Ages		Patients
25–35		3
36–49		5
50–65		8
Over 66		2
Marital state		
Married		15
Single		3
Results		
Living		15*
Dead		3
Pathologic conditions		
Adenocarcinoma		11
Squamous cell		1
Papillary adenocarcinoma		1
Colloid adenocarcinoma		1
Undifferentiated carcinoma		4
Colostomy		5
Before irradiation	4	
After irradiation	1	
Site of tumor		
Lower rectum		15
Sigmoid		1
Anal		2
Dead		
Two patients, one year after treatment		
One patient, 1 month after treatment		

* In the fifteen living patients, conditions were ameliorated in twelve, and three showed poor results.

The patient is kept in bed in a moderate Fowler's position and given a fluid diet only. Ten minims (0.6 cc.) of deodorized tincture of opium is given three times a day. The length of time the tube is left in place depends on the dose to be given and the amount of radium employed. The dosages we have used in our cases have varied from 2,500 to 8,000 milligram hours. After the planned for radium dose is given, the applicator is removed and the patient given daily enemas of salt water, and liquid petrolatum by mouth three times a day. The diet at first consists of fluid and soft foods, and gradually coarser foods are added. Following the radium treatment, a moderate colitis develops and may last for several weeks. Frequent rectal douches and at

7. Quick, Douglas: Radium Report of the Memorial Hospital, New York, Paul B. Hoeber, 1924.
8. Binkley, G. E.: Radiology **10**: 457 (June) 1928; Am. J. Roentgenol. **20**: 445 (Nov.) 1928.
9. Bowing, H. H.: Radiology **9**: 179 (Sept.) 1927.
10. Gordon-Watson, Charles: Acta Radiol. **10**: 345, 1929.
11. Kaplan, I. I.: Radiol. Rev. & Chicago M. Rec. **51**: 517 (Dec.) 1929.

times a bland opium suppository ease the inflammation.

If the treatment is well planned, healing takes place in two months and recession of the tumor will be more or less complete depending on the involvement. Should the lesion recur, a second radium treatment may be given, but an interval of eight to twelve weeks must be allowed before the second treatment is carried out.

CONCLUSIONS

As surgical intervention, to be effective, must be carried out early in rectal cancer, radium therapy is offered as an equally efficient method of treatment for all types of cases. A newer method is described for applying radium to rectal lesions, based on the Regaud principle of small doses of radium applied over a long period of time. A special applicator for the method is also described.

55 East Eighty-Sixth Street.

ABSTRACT OF DISCUSSION

DR. FRANK C. YEOMANS, New York: Surgery, x-rays and radium are still the only effective means available for the treatment of cancer of the rectum. Radical excision remains the preferable method of treatment in operable cases. Operability varies from 25 per cent (Witzel) to 80 per cent (von Bergmann). In my series of some 400 cases, surgery has been advised in approximately 50 per cent. Radiation therapy should be employed, when possible, without colostomy. Nevertheless, colostomy is a beneficent procedure, frequently too long delayed. When properly executed, with practically no risk under local anesthesia, it is far less objectionable than is commonly supposed. Preliminary to the application of radium a cycle of high voltage roentgen therapy is important and should be routine not only to affect the tumor proper but especially for its effect on the area of lymphatic drainage. Before using intralumenal radiation, it is essential to define the limits of the tumor so that the entire neoplasm is irradiated. If the growth is so situated or of such conformation that its upper margin cannot be palpated, its limit of upward extension is determined by passing a proctoscope of small caliber and confirmed by a roentgenogram after a barium clysma. Radium is then applied to the entire area involved, either by capsules of radon in tandem in a rubber tube if the cancerous lumen is extremely narrow, or by the applicator devised by Dr. Kaplan, which possesses the great advantage of enabling one to limit the irradiation to any desired segment of the rectal wall. I have used this applicator with satisfaction in a number of cases. For accessible anorectal cancers, efficient irradiation may be obtained with gold implants or removable platinum needles of radon. The latter obviates puncture of the tumor, with the possibility of infection and ulceration. In women, when the tumor involves the anterior rectal wall, the needles are inserted through the posterior vaginal wall. There is a class of cases hopeless of cure, of which one sees many at the New York City Cancer Institute, in which the process involves the anorectum and surrounding structures, "freezing" all tissues in a malignant mass and rendering life utterly miserable. In many of these, under spinal anesthesia and after preliminary colostomy, I have rimmed out widely the entire area involved by electrosurgery and implanted seeds of radon or inserted the applicator. The relief from suffering and the palliation afforded are well worth the effort.

DR. ISAAC LEVIN, New York: It was very interesting to hear Dr. Kaplan's exposition of his method of treatment of cancer of the rectum, which is about the same as I employed up to ten years ago. For the last ten years I have been doing the insertion quite frequently. However, I wish to emphasize that in carcinoma of the rectum one must individualize and use various methods. As long as one uses every method properly and thoroughly, one will get good results. I still have a patient whom I treated by Dr. Kaplan's method twelve years ago. The woman is well today. On the other hand I have a patient, a woman, the mother of a physician, who came in with a carcinoma of the rectum which was just about on the borderline of inoperability. There was an annular tumor adherent to the vaginal wall. Irradiation alone would have created a stricture and necessitated anyway a subsequent abdominal colostomy. I did a two-step radical operation and then I used radium. Today, four year later, the woman is well. Whenever a carcinoma of the rectum is annular, a colostomy is indicated, because constriction is already present and stricture will appear soon. If at least one third of the lumen of the wall is free, it is possible to avoid a colostomy. In the case to which I referred, there was an annular tumor 4 inches above the anus and radical operation was out of the question. I did an abdominal colostomy with an intraperitoneal insertion through the laparotomy opening, as I always do in these cases, followed by an insertion into the lower segment of the tumor through the anus. That was four years ago. I examined the patient a month ago. There is only a vestige of the carcinoma left in the rectum. I hope, in another year, to close the colostomy. A fourth patient, a woman aged 20 years and a bride of one month, came three months ago with an annular carcinoma of the rectum 3½ inches above the anus. To build a permanent abdominal colostomy in this case would have been tragic. I removed through a sacral operation about 7 inches of the rectum, i. e., to a point about 3 inches above the tumor. I left the sphincter ani in situ, carried the upper end of the rectosigmoid down into the anal opening, stitched it over the sphincter, and united both ends of the sphincter. I inserted radium in the parasacral region where infected lymph nodes were present. Today, three months later, the sphincter functions well for gas and fluid and defecation is normal. These four cases illustrate the fact that one has to individualize every case.

DR. H. H. BOWING, Rochester, Minn.: I would like to emphasize the remarks by Dr. Levin, especially the importance of individual treatment. The encouragement that I receive from treating carcinoma of the rectum may be considered under two headings: first, the occasional inoperable case in which benefit will follow treatment, and, second, the microscopic changes observed in the treated tumor tissue. I have observed cases of the inoperable group in which all vestige of the primary growth disappeared. Further, I have treated a few early operable lesions, the patients having refused operation, with a satisfactory local result and a normally functioning rectum. Almost all patients accepted for treatment derive some benefit from lessened discharges and decreased bleeding. Years ago a group of patients with carcinoma of the rectum were treated with radium as they presented themselves, and, following an interval of a week or ten days, a posterior resection was done. This method was soon abandoned. Edema increased, and bleeding and wound infection occurred. Today the significance of permitting sufficient time to elapse between the treatment and the operation is fully appreciated. This group furnished valuable material for study. The cases varied in extent, location and grade of malignancy. The interval between treatment and operation varied. Representative sections were taken from the operative material and studied microscopically. Briefly, those factors that MacCarty reported as enhancing longevity in the untreated case were found to be accelerated, hastened or favorably influenced in all cases. The surgeon appreciates his limitations in the treatment of certain cases. We, as radiologists, should appreciate our limitation in the treatment of this disease. The more we individualize treatment, the better our results will be. The full cooperation of all concerned is most essential. Dr. Kaplan's applicator is suited for the cases he presented. Yet to state what the technic should be for the average patient is impossible, because one must use the type of applicator best suited for the lesion under treatment. I have always felt that colostomy is not necessary in order to carry out treatment. One should irradiate the lesions effectively (conserving the normal bowel tissue if possible), and thus avoid colostomy. Further, those cases that are on the borderline for colostomy can be benefited by dietary measures and by instructing the patients how to get along with the imperfectly functioning rectum. A low residual, high caloric diet and instructions in the use of the low cleansing enema give much comfort to these patients. The patient or a relative should be told that a colostomy may have to be done at some future time; when necessary, it should be done at an elective time rather than as an emergency procedure. In treating female patients, the placing of heavily filtered radium in the vagina is of value. In treating extensive lesions by vaginal application

it is possible to reduce the size of the local growth; thus the complications of hemorrhage and infection are at least in part eliminated.

DR. IRA I. KAPLAN, New York: I didn't mean to leave the impression that the eighteen cases I described and that we treated over the last two years comprised all the cases of carcinoma of the rectum we treated at Bellevue Hospital. I am becoming somewhat canny, like some of our surgical friends. I don't quarrel with the surgeons; they are our best friends. But we are commencing to choose some of the cases on which we want to do only radiation therapy. The surgeons work with us in every case, just as in our breast cases. We are trying now the new method of treating breasts with radium or roentgen rays, a combination of irradiation along with surgery. Throughout the course of those two years, we had in our service at Bellevue Hospital to see, and we treated a great many of those that we saw, probably about 200 cases of carcinoma of the rectum. I believe that Bellevue Hospital has one of the largest intestinal clinics in the country, and of course not every case is suitable for radiation methods. We do try to individualize and we try to do our best for cases that are sent to us. I thank the men who have discussed my paper, because I have learned a great deal from their remarks.

SHOULD THE INTERNIST KNOW SYPHILIS?*

LOYD THOMPSON, M.D.
HOT SPRINGS NATIONAL PARK, ARK.

It is almost with fear and trembling, with many forebodings and misgivings, with an humble and contrite spirit that I approach the question which is the title of this paper and attempt to lay my answer before you. And yet was it not answered by the greatest internist of us all, the incomparable Osler, with his famous dictum to his students: "Know syphilis in all its manifestations and relations, and all other things clinical will be added unto you"?

It is obvious that in this enlightened day it is impossible for any one man to know everything in the entire field of medicine, but if one, even to a small degree, could approach the dictum of the Osler epigram, what a clinician he would be!

In the early days of the knowledge of syphilis, neither the physician nor the layman was, shall I say, burdened with a multiplicity of specialists? All followers of the healing art were at least presumed to know everything there was to know about it, so all physicians were syphilologists, and all syphilologists were simply physicians. Leoniceno, Torella and Fracastoro belonged to that era.

By the end of the eighteenth century, while specialists as they are known today had not yet been developed, medical men had dropped the almost savage custom of relegating surgery to the barbers, and the great syphilographers of the time, Astruc, Benjamin Bell and John Hunter, were surgeons.

But the trend toward specialism in medicine soon became evident and syphilis, along with its strumpet sister gonorrhea, being recognized as most frequently having its beginning in venery, the specialist in these diseases was developed. The recognition of the syphilodermas as symptoms and particularly the thought that they were all important symptoms led these specialists to add all diseases of the skin to all diseases of the genito-urinary organs in one specialty.

During the greater part of the nineteenth century, the diseases of these two parts of the human body continued in wedded bliss, and most of the most eminent syphilologists were both urologists, as they soon preferred to be called, and dermatologists. Later, however, they began to separate, the urologist going his way with his kidneys, his bladders and his prostates, and leaving syphilis more and more to the care of the dermatologist.

Through all this, the internist has sat back and calmly ignored to a greater or lesser extent the importance of syphilis to himself, simply because the vast majority of cases have their beginning on the genital organs and their most obvious manifestations on the skin. Is it any more logical to do this than to fail to be interested in smallpox, measles or scarlet fever?

There are often, even early in the course of syphilis, certain constitutional symptoms, not referable to any particular organ, which, while as a rule not of great diagnostic value, should arouse suspicion on the part of the clinician. One of the most striking of these is the fever, which has been described as occurring in a number of varieties, the most important of which are the irregular afternoon rise of temperature, rarely exceeding 101 F., and the continuous or "typhoidal" type, the temperature gradually rising after prodromal symptoms, such as malaise and anorexia.

Persistent headache and angina are frequent symptoms of early syphilis and, if found together, should always lead the clinician to investigate for further evidence of this disease. Fournier described three varieties of headache found in early syphilis: a diffuse cephalalgia, meningismus or occipital headache, and spotlike pains due to localized areas of osteitis. The headaches of late syphilis vary from rather mild, continuous pain to severe burning, blinding pain as found in the brain tumor, and often are most distressing.

The osseous system is the seat of various symptoms, both in early and in late syphilis, which often are most significant. Ostealgia in early syphilis, so-called osteocopic pain, for which no definite cause has been ascribed, may be due to a beginning osteitis, although not of sufficient degree to give rise to demonstrable pathologic change. Osteitis and periostitis with greater or lesser pathologic change, however, are not infrequent both in early and in late syphilis, and give rise to pains and swelling of varying degree. Arthritides, low grade inflammation of the joints, and even true polyarthritis, while rare in early syphilis, are observed with comparative frequency in the later stages.

Gastro-intestinal symptoms in early syphilis range from simple anorexia to projectile vomiting due to intracranial pressure. Actual gastritis due to syphilis in the early course of the disease has not been demonstrated, but from the fact that macular and papular lesions have been demonstrated in the bladder and are common in the mouth it is reasonable to suppose that they at times exist in the stomach. Late gastric syphilis, diffuse gummatous infiltration, single or multiple nodulo-ulcerative lesions and single large gummas, with their accompanying symptoms, are too well known to be more than mentioned.

The cardiovascular system is the seat of syphilitic involvement probably in all cases, and even early in the course of the disease sufficient pathologic change to cause symptoms sometimes, though rarely, takes place. Most significant of these instances are one or two cases of heart block which have been reported and which have responded to antisyphilitic treatment.

* Read before the Section on Practice of Medicine at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

Late cardiovascular syphilis constitutes from 5 to 15 per cent of all cardiovascular disease and is found as aortitis, with or without aneurysm, myocarditis, involvement of the coronaries, endarteritis and phlebitis.

Involvement of the liver is the most frequent of all syphilopathies and was recognized by some of the earliest syphilographers, some of whom, in fact, looked on the liver as the chief focus of the disease.

Early syphilitic hepatitis, manifested usually only by a jaundice of varying degree, occurs in about 1 per cent of all cases, while icterus gravis as an early expression of the disease fortunately is very rare.

Late syphilis of the liver occurs as cirrhosis and as localized single or multiple gummas, the processes being found alone or together and the symptomatology depending on their location. Perihepatitis of varying degree of extension from the parenchyma of the liver also is not infrequently seen late in the course of syphilis.

It has been shown that the spleen is palpable in early syphilis in about 36 per cent of cases and in late syphilis, including latent cases, in about 5 per cent.

The presence of albumin, casts and red blood cells in the urine in a small percentage of cases of early syphilis which clear up under antisyphilitic treatment at times justifies the diagnosis of acute syphilitic nephritis, while in late syphilis there sometimes occur chronic nephritis, gummas and amyloid kidney.

That pulmonary syphilis has been mistaken for pulmonary tuberculosis, and vice versa, is not surprising, although it must be admitted that the former is comparatively rare. It occurs, however, as gummas, diffuse fibrosis and syphilitic peribronchitis, and is always a manifestation of late syphilis.

Neurosyphilis as one of the most important, if not the most important, of the consequences of spirochetal infection need only be mentioned, for a discussion of this phase of the subject would lead us much too far afield. May I simply remind you in passing that neurosyphilis is not necessarily of late occurrence; that meningitis, encephalitis, myelitis and cranial nerve involvement are not infrequently seen early in the course of the disease?

It is now recognized by all that the earlier syphilis is diagnosed, the better are the chances of cure. The chancre is the first sign of syphilis, and although very often it can be diagnosed with absolute accuracy on clinical evidence alone, even the most astute clinicians insist that a dark field examination be made for spirochetes on all venereal or other questionable sores before a definite conclusion is reached. And it is the reluctance, the indisposition, on the part of the general practitioner, the one who first sees the majority of chancres, to use the dark field, which is one of the great stumbling blocks to the eradication of syphilis. It has long been the hope of syphilologists, however, and the hope has not died, that a differential stain for *Spirochaeta pallida* will be developed which will be as easy of application as the Gram stain for the gonococcus. Then the general practitioner will have no excuse for not making an early diagnosis of syphilis; but even now, without such a stain, we as internists should insist on a more universal use of the dark field.

Is it not obvious, if we recognize every syphilitic chancre when the first slight swelling and induration of the epidermis makes its appearance and render that lesion noninfectious within twenty-four hours, which can be done, that the number of possible infections from any given chancre will decrease a thousandfold over the old method of waiting for the so-called secondaries to appear?

And now, what about these so-called secondaries? Are they really of much importance in syphilis? By that I mean, are they often of much assistance in the diagnosis of the disease? In the first place, with the increased use of the dark field and early treatment they are becoming less and less frequent. In the second place, while they may readily be confounded with other dermatoses, when they are present it is most rare that other symptoms and lesions are not manifest—the remains of the chancre, the superficial adenopathy, the alopecia. And, finally, the serologic tests are positive in practically 100 per cent of cases. Who has not seen even eminent dermatologists disagree over the diagnosis of a dermatosis and finally rely on the Wassermann or the therapeutic test?

So it would seem that, while the great burden of the control of this ubiquitous disease must rest on the general practitioner who sees it first and who must learn to use the dark field until a satisfactory differential stain has been devised, it is the internist who must take up the load when the disease has become generalized. I am not attempting to deprive the urologist or the dermatologist or any other specialist of the right to diagnose or treat syphilis in all its phases, provided his training is such as to qualify him for such work. But I do insist that syphilis is not a genito-urinary disease, is not a disease of the skin; it is a constitutional disease, a disease of the internal organs, and the internist is the one who is or should be best qualified to keep it within his domain.

There are, of course, times when the urologist and the dermatologist must be called on for assistance. I mean in those rare instances when the genito-urinary organs are involved other than by the chancre, and in those increasingly less frequent instances of atypical late syphilodermas. But at times we must also call on the surgeon, the gynecologist, the ophthalmologist and the otolaryngologist.

And now, in closing, may I offer as a corollary to the Osler epigram: If you would be a real clinician, you must know syphilis in all its manifestations and relations.

236 Central Avenue.

ABSTRACT OF DISCUSSION

DR. JOHN H. STOKES, Philadelphia: I hope I have not been asked to discuss Dr. Tompson's paper in an attitude of rebuttal. My own impressions on the matter are these: No one has a claim on syphilis *ipso facto*, unless it be the public health authorities, on the ground that it is an infectious, transmissible, controllable disease. Claims to syphilis must be established, if at all, by the right of special interest and enthusiasm, special aptitude, special opportunity and special training. There is no domain. There are gynecosyphilologists such as Gellhorn, pediatrosyphilologists such as Jeans, and obstetrosyphilologists such as McCord. Eighty per cent of the venereal disease in this country is cared for by general practitioners, and 60 per cent of this portion by a relatively small group of unnamed or hedgerow specialists who "just growed" à la Topsy, presumably because they were interested. Experience is convincing me that while every one must know the syphilology of his field, modern preventive syphilology is most wisely cultivated by a special group, the future to show us whether this is to be the venereologists as such, as in Europe; the urologists, the dermatologists, the general practitioners, as here; or the state public health officers, again as in Europe. I have not named the internist, for he is, I believe, at the wrong end of the problem, like the neurologist. His interests are largely consequences. He must know the effects of established syphilis in the individual. His emphasis will tend to be nonpreventive and

consequential. With apologies to my hosts, see how little he has improved his opportunities or met his responsibilities in cardiovascular syphilis. The grand category of medical symptomatology is neurosyphilitic in origin, yet the internist writes in extenso on gastric, renal and hepatic syphilis, three of the real rarities of the field. The chancre, secondaries and infectious recurrences are the important lesions of syphilis, the whole future of the disease as a problem in preventive medicine. No wonder the dermatologists and the urologists claim it. My experience in the teaching of syphilology has impressed me with the futility, the pointlessness, of the "stress the dark field" slogan to the practitioner. A highly special instrument, expensive, technically complex, requiring training for its use, and hardly usable elsewhere than on the chancre, will never be in every doctor's office. Dark field examination is a centralized affair for laboratories, clinics and experts. What is really needed is a mechanism such as exists for gonorrhea smears, diphtheria cultures and Wassermann bloods. The published background and technic, studied in this country by Mahoney and Bryant, for example, exists and awaits development. May I close with a prediction? Unless the men who see the onset of syphilis—the chancre and secondaries, the syphilitic pregnant woman, the transmissible phases of the disease—wake up, syphilis will gravitate, not into the hands of the internist, nor even the lowly dermatologist, as it has abroad, but into the hands of socialized medicine and the state.

DR. LESLIE T. GAGER, Washington, D. C.: In any active hospital practice—and I have observed that hospital practice is usually the end-stage of what began as some physician's private practice—there is abundant opportunity to answer Dr. Thompson's question in the affirmative; and if, as Dr. Stokes observes, the internist is beginning at the wrong end, I am not sure that it is our fault: it was Osler also who claimed syphilis, after the first few weeks, as a medical condition. Within recent months I have seen a woman of 40 with a recurrent tumor of the lip. This tumor had been removed six months before by a surgeon under the diagnosis of epithelioma; now, under two injections of neoarsphenamine, the tumor has disappeared. Again, a woman of middle age was admitted with extreme dyspnea and loss of voice. If we had known in the ward what was revealed at the necropsy, perhaps we should have been able to perform tracheotomy and thereafter control her syphilis of the larynx. Another woman presented a picture essentially of pulmonary disease: she came in with dyspnea and with absence of breath sounds in the left chest, due possibly, it was thought, to a new growth in the mediastinum. Necropsy showed a large aneurysm constricting the primary bronchus. How often the presence of frank aortic disease is overlooked, sometimes even in a syphilis clinic, I need not mention. This spring to a fourth year class of medical students I showed a patient with Charcot joints. Now if one sees three or four cases of Charcot joint a year, the condition becomes clear; but to those who have not seen it, the diagnosis is not so easy; and these students proceeded again to prove the old maxim that one has to know in order to see. Finally, in still another domain, was a woman with a headache persistent for a month; the physical examination was negative and neurologic signs were absent. Lumbar puncture and a positive spinal fluid proved the diagnosis of cerebrospinal syphilis. The first patient I have mentioned serves to call to mind that quotation which Sir John Bland-Sutton makes, in his delightful "Story of a Surgeon," of his teacher Hulke, who said "Physicians need not be good surgeons, but every surgeon should be a good physician"; and, after all, from my experiences with patients it seems that for guidance and counsel in the crises of life what the patient generally needs first is not so much a specialist as a real doctor.

DR. A. I. RUBENSTONE, Philadelphia: I feel that syphilis does not belong to the dermatologist, neurologist or internist exclusively. It is a constitutional infection and belongs to all specialties alike. What is needed more is the cooperation of the dermatologist with the internist in all stages of syphilis, because even in early syphilis visceral complications should be sought and do occur that require the internist's attention. In an active hospital service, we internists see the end-results of syphilis, whether they be cardiovascular, gastro-intestinal, renal or neurosyphilis. It is in these types of patients, especially, that I make a plea for coordination between the syphilologist and the internist so that the best results and treatment may be obtained. It is obvious that in this class of patients intensive treatment of the syphilis, in the hands of a dermatologist, might prove harmful to the patient who not only suffers from the end-results of syphilitic infection but may have visceral damage due to other causes. Another phase of syphilis which one should bear in mind, and which Dr. Stokes continually emphasizes, is that the clinical manifestations termed neurosyphilis are really an extremely late manifestation of infection of the cerebrospinal stem; that easily 40 to 60 per cent of early syphilis passes through the nervous system and that the physician should recognize that a symptom-free patient with a negative blood Wassermann reaction does not mean that an infection of the cerebrospinal stem is not present that will yield the neurosyphilitic patients of the future. It is important, therefore, in order that late neurosyphilis may be held down to a minimum, that the physician pay particular attention to neurologic signs and negative spinal fluid examinations following the so-called cure of primary and secondary syphilis.

PERNICIOUS ANEMIA COMPLICATED BY ACUTE MILIARY TUBERCULOSIS

REPORT OF A CASE *

WILLIAM FREEMAN, M.D.
BOSTON

Pernicious anemia complicated by tuberculosis is a comparatively rare condition. Only nine cases have been reported in the literature since 1898. Pernicious anemia complicated by acute miliary tuberculosis is even less common. Such a case is described in this paper, and the available reports of the condition first named are summarized.

REPORT OF CASE

History.—A Negress, a widow, aged 65, matron in a large department store, was admitted to the medical service of the Massachusetts Memorial Hospitals, Sept. 13, 1930, with a complaint of muscular weakness. She remembered few of the details of her history. She was born in Virginia and had been a resident of Massachusetts for the past sixty years. She had had three miscarriages; five children died sometime after birth, and two children were living and well. Her husband had been dead seventeen years. The menopause was reached gradually twelve years previously and there had been no symptoms since. The patient had measles when she was a child. She gave no history of previous hospital entries, injuries or operations. One sister was dying of cancer.

The patient had had several teeth removed, with relief of symptoms. Her appetite had always been good up to the present illness. She gave a history of moderate chronic constipation which was relieved by catharsis. Since the onset of the present illness, she had to take daily cathartics. Defecation had been painful, except during attacks of diarrhea, which began with the present illness. Diarrhea had occurred about once a week, usually lasting for a day. There had been no colic, icterus, ascites or abdominal pain. The patient's best weight had been 123 pounds (56 Kg.); she had lost 12 pounds (5.4 Kg.) in the six weeks preceding her admission to the hospital. She could move all parts of the body slowly while in bed, without pain but was unable to support herself in the seated or erect position. The remainder of the regional history was irrelevant.

Sudden onset of generalized muscular weakness occurred three weeks prior to admission; she attempted to get out of bed and fell to the floor. She had since been confined to bed. She felt weaker in hot weather; otherwise the condition neither progressed nor regressed.

Examinations.—The patient was fairly well developed, slightly emaciated, conscious, rational, fairly cooperative, and in no pain. The pupils were regular and equal, and reacted equally to light and in accommodation. The lips and gums were

* From the Department of Pathology, Massachusetts Memorial Hospitals.

pale; the remaining teeth showed much tartar. The tongue was normal; it protruded in the midline and showed no tremors. Visible pulsation at the suprasternal notch was synchronous with the apex beat, which was best heard in the normal location; the heart was not enlarged on percussion. A loud systolic murmur, heard at the apex, was not transmitted. The cardiac rate was regular. The lungs were normal. The liver edge, felt two fingerbreadths below the costal margin, was not tender. The extremities showed fair active motion without weight bearing; active motion with weight bearing was absent. The biceps, triceps and knee reflexes were equal but sluggish. The blood pressure was 128 systolic and 58 diastolic. The cervix was slightly lacerated and atrophied. The uterus was retroverted and "frozen." The anal sphincter was tight and tender. No subcutaneous or submucous hemorrhages had occurred. The physical examination gave otherwise negative results.

The hematologist reported that the results of the blood examination were typical of pernicious anemia; he suggested liver therapy and a daily morphologic blood study. The neurologist could not account for the increased temperature in this case of pernicious anemia. October 7, the blood culture was contaminated. The Wassermann, Kahn and Hinton reactions were negative. Roentgen examination of the lungs, October 9, showed a diffuse, hazy infiltration of both lungs. The heart shadow appeared enlarged (supine film). Roentgen examination of the teeth showed a diffuse pericementitis and a retained root. October 22, a blood culture showed no bacterial growth after seven days' incubation. The average of five complete, twenty-four hour urine examinations, approximately a week apart, showed essentially normal urine.

There was a persistent leukopenia varying from 2,500 to 5,500 cells per cubic millimeter. The average neutrophilic percentage was 85. From the time of the patient's admission to September 26 there were marked poikilocytosis, anisocytosis, anisochromia and polychromia. From then on, these conditions were less pronounced. From the date of entrance to September 24 (two days after beginning the liver therapy) the hemoglobin remained at 49 per cent. The erythrocyte count fluctuated from a minimum of 930,000 to a maximum of 1,095,000. The color index ranged from 2.0 to 1.5. The erythroblasts varied from 10 to 3 per hundred leukocytes. From September 25 until the patient died the hemoglobin fluctuated from 45 to 70 per cent; the erythrocytes from 1,045,000 to 2,220,000; the color index from 2.2 to 1.5, and the erythroblasts from 6 to 0.

From the time liver therapy was instituted to the time the first lung symptoms were elicited (October 5) the daily morning temperature was around 100 F. and the afternoon temperature around 102.5 F. The pulse rate averaged 90, and the respiratory rate averaged 25. From October 5 to October 12, the temperature changed to 99 in the morning and 101 in the afternoon. From October 12 to October 26 (when definite pneumonic signs were found) the temperature changed to 99 in the morning and in the afternoon. The pulse fluctuated between 90 and 120, the respiratory rate remaining unchanged. From October 26 until death, the axillary temperature again assumed a septic type and ranged from 98.6 in the morning to 101 in the afternoon. The pulse hovered around 130. The respiratory rate became irregular and rose to around 44.

Treatment and Course.—Liver therapy was instituted ten days after the patient's admission, but no change was noted. October 5 (twenty-three days after admission), the first lung signs were elicited; increased resonance and fine râles were heard over the entire right base. The patient felt no change. Thirty-one days after her admission (October 13) the right base showed a definite dulness and increased fremitus. Ten days later the patient became weaker and delirious; the legs were edematous and the eyes slightly icteric. The day before death, pneumonic signs were found scattered over both lungs; pitting edema of the legs was more marked; the icterus was slightly increased, and ascites was found. The patient was conscious but could not talk.

COMMENT

The hematologic examination, the weakness, loss of appetite and lack of tuberculous signs indicate the priority of onset of pernicious anemia. Unfortunately a complete record of the neurologic observations was not made, but apparently the neurologist was satisfied that they were consistent with pernicious anemia, excepting the increased temperature. An examination of the gastric contents and of the eyegrounds, a neutral red test, and a determination of the icteric index should have been made. Glossitis, subcutaneous and submucous hemorrhages, usually found in pernicious anemia, were absent in this case. An increased temperature in uncomplicated cases of pernicious anemia is not uncommon. On the institution of liver therapy, the hematopoietic improvement was slow but definite; tuberculosis set in before much headway could be made. The increasing severity of the tuberculous process did not completely retard the slow blood improvement. The icterus, edema and ascites were probably hepatic in origin. The onset of tuberculosis was insidious at first, but when the acute miliary process started, death was rapid. The high evening temperature, herpes, leukocytosis and the urinary condition, usual accompaniments of acute miliary tuberculosis, were absent in this case.

Death was due essentially to the tuberculous process. The original focus was the peribronchial lymph nodes, which showed complete destruction, as indicated by a dense fibrous wall encapsulating caseous material. The miliary tubercles, which studded the lungs, liver, spleen, peritoneum, omentum and mesentery, were atypical in their histologic appearance. There was a distinct absence of fibroblastic proliferation, lymphocytic infiltration, and foreign body giant cells. Caseation necrosis, monocytic infiltration and many acid-fast bacilli were demonstrated in each lung. The right pleural apex revealed a healed tuberculous scar. There were no tubercles found in the thyroid, heart, gallbladder, pancreas, kidneys, urinary bladder, suprarenals, uterus and adnexa or bone marrow. The brain and spinal cord were not examined.

The observations consistent with pernicious anemia were lemon-yellow abdominal fat; bright red abdominal and skeletal muscles; hepatic hypertrophy and marked fatty degeneration; pitting edema of the legs; ascites; slight splenomegaly, and markedly hyperplastic femoral bone marrow. The cavity of the left femur was completely filled by a semifluid bright red marrow. Microscopically it showed the spaces between the fat cells crowded with blood cells, chiefly erythrocytes. There were many nucleated red and white cells; many of the erythrocytes had pyknotic nuclei; those with young nuclei were chiefly megaloblasts. A few were undergoing mitosis; some, laryorrhexis. There were many neutrophilic and eosinophilic myelocytes and many myeoblasts (lymphoidocytes of Pappenheim). There were a few accumulations of yellow-brown pigment, but they were less numerous than is usual in cases of pernicious anemia. Glossitis, subcutaneous and submucous hemorrhages, fatty degeneration of the myocardium and atrophied gastric mucosa were absent. Incidental observations were myocardial fibrosis, chronic arteriolarsclerotic kidneys and slight chronic cholecystitis.

SUMMARY

A widowed Negress, aged 65, presented sudden muscular weakness, loss of appetite, and obstipation with occasional attacks of diarrhea of three weeks' duration. The past history was essentially irrelevant. On entry, there were atypical symptoms and signs of uncomplicated pernicious anemia. Liver therapy led to slow improvement. Twenty-three days after admission the first signs of pulmonary tuberculosis were found, which soon assumed the acute miliary form, resulting in death forty-eight days after admission, in

spite of a definite improvement in the pernicious anemia.

At autopsy, atypical acute miliary tuberculosis was found in both lungs and in the liver, spleen, peritoneum, omentum and mesentery, the original focus being the peribronchial lymph nodes. Atypical conditions of pernicious anemia were present in the spleen, the liver and the femoral bone marrow. Ascites and edema were noted also.

REVIEW OF THE LITERATURE

In 1898, Hills [1] presented the first available case on the subject. Although his case of chronic glandular tuberculosis may have been complicated by pernicious anemia, the meager evidence presented does not permit any definite decision as to the type of anemia present. The same decision is arrived at from the case reports of Obraztsoff,[2] Fiessinger,[3] Labbé [4] and Pissavy.[5]

Ribadeau-Dumas' [6] case report was detailed enough to diagnose a definite severe secondary anemia accompanying the acute generalized miliary tuberculosis, which is a rather common condition.

The first authentic case was reported by von Dieballa [7] in 1907. The patient was a man, aged 55, ill with pernicious anemia. After seven months, signs of active pulmonary tuberculosis were found, and the patient died two months later. The improvement of the pernicious anemia was marked during this time; the intervention of tuberculosis had no apparent bearing on the improvement. Death was due to active pulmonary and peribronchial tuberculosis with cavitation. The femoral bone marrow activity resembled that found in our patient. A similar case was reported by Mathias [8] in 1926. The pernicious anemia in this case was complicated by chronic glandular tuberculosis. The following year, Neuburger [9] reported another case of pernicious anemia complicated by chronic tuberculosis.

Nine cases are found recorded in the literature since 1898 wherein tuberculosis and pernicious anemia were considered to be present in the same patient. Six possible cases do not offer substantial evidence of pernicious anemia and can therefore be disregarded.

Von Dieballa, Mathias and Neuburger reported authentic cases in 1907, 1926 and 1927, respectively. All three of these cases were complicated by chronic tuberculosis; pernicious anemia was of prior onset.

I present a fourth authentic case of the dual presence of pernicious anemia and tuberculosis. In this case the tuberculous process was of the acute miliary form. Pernicious anemia had, undoubtedly, the priority of onset and improved slightly with liver therapy in spite of the development of the complicating tuberculous process. Tuberculosis actually killed the patient.

82 East Concord Street.

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2. Obraztsoff, V. P., and Visokovitch, V. K.: A Case of Malignant Anemia on the Basis of a Tubercle, the Size of a Millet Seed, Bolnitsch. gaz. Botkina **9:** 1793-1800, 1898.
3. Fiessinger, N., and Moreau, R.: The Anemic Form of Miliary Tuberculosis, Bull. et mém. Soc. méd. d. hôp. de Paris **34:** 449-456 (Nov. 8) 1912.
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7. von Dieballa, G.: Remission einer Anaemia perniciosa im Anschluss an Tuberkulose, Ztschr. f. klin. Med. **71:** 284-287, 1910.
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CONTROL OF TYPHOID IN RICHMOND COUNTY, NORTH CAROLINA

A. B. McCREARY, M.D.
Epidemiologist, North Carolina State Board of Health
RALEIGH, N. C.

This paper is intended to set forth a brief description of the methods adopted toward the eradication of typhoid fever in Richmond County, N. C. Richmond County has about 35,000 people, two thirds of whom are Negroes. It is situated on the southern border of the sandhill belt, near Pinehurst. It is a manufacturing, agricultural and railroad center.

The county health department, functioning in cooperation with the state board of health, was organized in November, 1924. Typhoid had long been a problem in the county. As early as 1916 the state board of health had conducted an effective campaign against the disease with fine results, but the fight against typhoid was neglected from 1917 until the organization of the county health department.

In the first year of the organized health work, there were 35 cases with 10 deaths. In 1926 there were 19 cases with 5 deaths. In 1927 there were 3 cases with 1 death; 1928, 8 cases with 2 deaths; 1929, 5 cases with 2 deaths. More than 75 per cent were Negroes, none of whom had ever been inoculated.

Richmond County averaged for the nine years prior to 1927 22.8 cases a year. For the period of three years from Jan. 1, 1927, through 1929, the average was 5.3 cases a year. During the seven years from Jan. 1, 1918, to Dec. 31, 1924, Richmond County had 152 cases of typhoid with 26 deaths. A local paper carries a column captioned "Ten Years Ago Today" in which there are frequent references to typhoid cases and deaths. It was looked on as a matter of course at that time; it was not taken seriously by the public in spite of its great toll.

Over a period of five years, 5,058 complete immunizations for typhoid were given, and it is reasonable to assume that 2,000 of those immunized returned for reinoculation after three years. This means that 3,000 persons, or less than 10 per cent, are availing themselves of the protection offered by typhoid serum. The number of colored persons taking it was probably less than 0.5 per cent. So, the problem was to reach the negligent 99 per cent.

The specific methods of control in Richmond County have been based on three propositions: first, general health education; second, regulation of sewage disposal under the state sanitary privy law; third, immunization against typhoid.

HEALTH EDUCATION

Naturally, health education is the goal every one is striving for, being, of course, a promulgation of all other methods of control. In the educational methods attempted through all possible agencies, the fact that 40 per cent of the population of the county was made up of Negroes, many of them illiterate and ignorant, enforced the necessity for simplification in every detail. The Negro is nothing if not emotional and religious. With this in mind, the health officer, acting with the welfare officer, elicited the aid of the Negro clergy. As a result, the health officer was able to make talks directly to the congregations of practically every colored church in the county. The burden of the talks in the churches was to the effect that, if the worshipers were to be consistently religious, they must take pains to protect

their bodies from disease. The response was even better than was anticipated. The Negroes were so converted to immunization that they assented to their children being given not only typhoid serum but also toxin-antitoxin, and large numbers of them were vaccinated against smallpox, so that what was primarily a typhoid campaign developed into a campaign for the general advancement of approved health measures. Fifteen hundred colored children received toxin-antitoxin during the last six months of 1929, and an equal number of white persons were immunized during the same period.

In these talks in connection with the clinic work, good screens, safe sewage disposal and pure water and milk supplies were stressed. The information the audience carried back to their more indifferent neighbors was worth a great deal in the advancement of the control measures. An intensive publicity campaign utilizing the best available spaces of the local press was employed. The motion picture theaters presented slides carrying brief warnings of the danger and advising inoculation. The schools contributed their part to the general program by bringing it to the attention of the children daily. The ministers of all the churches contributed materially to bringing it to the attention of their congregation. Circular letters were utilized, and the ordinary appeal through letters to the practicing physicians were sent out. The people on all sides were urged to take and to talk typhoid inoculation. The support of physicians was obtained by personal calls. In every suspected case the health officer made one or more visits with the family physician, and several visits to persons who could hardly be called suspects. Franked containers were placed in the hands of all physicians for the purpose of getting blood specimens, but as the health officer expressed a willingness to get these specimens for them, it was usually done by the officer since he would see the patients not later than twenty-four hours after the family physician had reported them. A typhoid case card was filled out on every suspect and considered as typhoid until ruled out by the blood culture, Widal, stool or symptomatology. Of seventeen individual records for 1929, five were positive typhoid, twelve were ruled out because the history, symptomatology, laboratory observations or ultimate discovery of the causative factor did not justify a diagnosis of typhoid. It is easy to believe that many of the cases diagnosed as typhoid in Richmond County in the past were probably something else.

SANITATION

The greater percentage of the decrease in typhoid has been due to better sewage disposal. During 1925 and 1926, the majority of the cases were in the towns of Rockingham and Hamlet. The installation of proper sewage facilities in the areas where typhoid occurred has marked the disappearance of the disease from the towns since 1926. So, the problem now is not how to take care of the small towns but how to control outbreaks in the rural districts; how to protect the vacationist, the farm tenant and the Negro. North Carolina has a state-wide sanitary privy law which provides that a householder is not permitted to have any kind of privy or system of sewage disposal within a mile of any municipality, that has not been approved by the state board of health. This law was especially valuable in the suburbs of the towns out of reach of the sewer lines.

The typhoid rate in Richmond County has decreased strikingly in the past few years, and it is felt that with these standards of control it should not rise. The foregoing plan can be applied in any rural county regardless of locality, the problem being to reach the ignorant members of all races, selling them the idea of disease prevention. Local conditions must govern the method of salesmanship. Each individual health officer, with a knowledge of his people and of their needs, must decide on the best method of health education to employ in his own community.

CONCLUSION

We attribute the decrease in typhoid in Richmond County among Negroes and ignorant white persons to the following:

1. Information by word of mouth is given to the uneducated public concerning typhoid and the value of better hygienic conditions.
2. Improved sanitary conditions, grade A milk, inspected foods and adequate sewage disposal cannot, with this type of person, be put over by pamphlets and newspapers. They must hear the word.
3. The cooperation of the public and of the medical profession in an oral program is essential.
4. The assistance of the newspapers with this class is useful only so far as educated persons are stimulated to impart information orally.

GONOCOCCAL BACTEREMIA IN A WOMAN, WITH CURE BY SURGICAL INTERVENTION *

JOHN H. GARLOCK, M.D.
NEW YORK

In May, 1930, Wheeler and Cornell [1] reported from the First Surgical Division of the New York Hospital a case of gonococcal bacteremia cured by operation. This probably represents the first case of its kind in surgical literature. Soon afterward, a patient presenting a similar condition was admitted to the Second Medical Division of the New York Hospital, and her case forms the basis of the present communication. A detailed description of the illness of this patient is herewith appended, because it is felt that the problem which presented itself is of considerable importance and that its solution opens up a new field in the therapy of this disease.

REPORT OF CASE

R. H., a woman, aged 26, was admitted to the medical service of the New York Hospital, June 26, 1929, with the chief complaint of fever and rash of four weeks' duration. Four weeks before, the patient came home from work unusually tired and suffering from a severe headache. That night she had a chill, followed by fever. This occurred on the first day of her last menstrual period. On the following day, a fine rash appeared over the feet and hands. By the third day, all the symptoms had disappeared. One week later there again developed chill, fever and rash, the latter being quite tender. The patient noted also pain and stiffness in both ankles. Since then, she had had irregular attacks of chills, fever, rash, and pains in the joints. Two days before admission, she had a severe epistaxis. For about a week she had noted palpitation. There was no history of cold, sore throat, chorea or rheumatism. The past history was completely negative. She was married seven months and had never been pregnant. Menses were always

* From the Second Surgical Division of the New York Hospital, Service of Dr. Eugene H. Pool.

1. Wheeler, G. W., and Cornell, N. W.: Gonococcal Bacteremia in a Woman, with Apparent Cure by Surgical Intervention, J. A. M. A. 94: 1568 (May 17) 1930.

normal. There was no history indicative of gonorrheal infection.

Physical examination showed that the patient, who was acutely ill, was well developed and well nourished. The tongue was coated, and the right tonsil was ragged. The heart was slightly enlarged to the left. There was a soft systolic murmur at the apex and a very rough systolic murmur at the pulmonic area. There was no palpable splenic enlargement. The lungs were clear. The skin over the back and over the anterior wall of the chest presented a coalescing honey-colored macular rash. On the extensor surfaces of both forearms and the flexor surfaces of the legs were many rose-red, somewhat nodular areas, varying in size from a dime to a five cent piece (from 18 to 21 mm.). Pelvic examination disclosed a soft boggy cervix. The uterus was small and anterior, and no masses were felt. The temperature was 104 F; the pulse was 110, and respirations were 22. Urinalysis gave negative results. The red blood cells numbered 4,980,000; the hemoglobin content was 90 per cent; the white blood cells were 17,250, and the polymorphonuclear leukocytes were 72 per cent. The Wassermann reaction was negative.

Three blood cultures, taken June 27, July 2 and July 5, showed a heavy pure growth of a gram-negative diplococcus. Great difficulty was encountered in obtaining subcultures of this organism, because it would not develop satisfactorily in mediums usually employed for the gram-negative coccus group. It appeared to grow only in the presence of small amounts of blood. The organism fermented dextrose, producing acid but no gas. It did not ferment maltose. It gave the microscopic and cultural characteristics of the gonococcus. July 24, a gram-stained film from the cervix for the first time showed numerous pus cells and gram-negative cocci, some intracellular. Cultures from this material were unsatisfactory.

The patient was observed for a long time from the medical point of view. The heart became somewhat enlarged, and systolic and diastolic murmurs developed at the apex. After the blood cultures were reported, the case was thought to be one of gonococcal endocarditis. The patient became somewhat anemic. The red blood cells dropped to 3,920,000 and the hemoglobin to 70 per cent. The white blood cells dropped to 22,000 and polymorphonuclear leukocytes to 74 per cent. Even though the course of the disease was prolonged and septic, the patient did not go down hill, as one would have expected, and her nutrition was remarkably well preserved. She was seen by numerous consultants, an ophthalmologist, an otologist and a gynecologist, and all their examinations gave negative results.

July 15, she was transferred to the Second Surgical Division. On the basis of the boggy cervix, a dilation and curettage was decided on. Visual inspection of the cervix did not show any signs of infection. The uterus was gently curetted, and some organized blood clot was obtained. This was reported as decidua. However, her condition did not improve and she still had a septic temperature. Five transfusions were given, two of the exsanguination type on the advice of Dr. Stetson. No improvement was noted. Finally, it was decided that something more radical was necessary. Since the pathologic site of gonococcal infection is in the cervix and tubes, an operation on these structures seemed indicated in spite of the negative observations. It was argued that, if the patient had a gonococcal endocarditis, the prognosis was hopeless and operation would do no harm. However, if no endocarditis was present, operation offered her her only chance. Accordingly, the operation was performed, August 10. A lower left rectus incision was made. No fluid was encountered. Grossly, the pelvis structures looked normal, with the exception of some reddening of the tubes. No exudate was present. A thickened vein was seen in the left broad ligament. Both tubes were removed with as much of the broad ligaments as possible, and the wound was closed without drainage. The cervix was then thoroughly cooked with the bipolar current of the endothermy machine.

That night, the patient's temperature reached normal for the first time in seven weeks. Except for an occasional rise, the temperature came down to normal. She was discharged from the hospital six weeks later with the wound healed by primary union and the cervical stump completely healed. All blood cultures after operation remained negative.

Pathologic examination of the tubes showed some polymorphonuclear leukocytes and sparse round cell infiltration. No organisms were seen. No venous thrombi were found in spite of a very careful search.

The patient has been seen many times since discharge from the hospital. She has been in perfect health ever since. The last examination was made, April 28, 1931. At that time she stated that she had gained 20 pounds (9 Kg.) and had no complaints. Examination showed a clear skin, a normal blood count, a healed cervical stump and a normal pelvis. The heart murmurs, noted during her stay in the hospital, were no longer audible, and there was no cardiac enlargement.

COMMENT

It is interesting to note that, of eight blood cultures taken, only three were positive for the gonococcus. This would indicate an intermittent bacteremia. This type of infection is quite different from the other variety of gonococcal bacteremia as observed at New York Hospital. In the latter, all blood cultures had been positive, and all cases have terminated fatally. They all gave definite evidence of serious involvement of the endocardium. The course of events in the illness of the patient here described would indicate the presence of an infected focus which introduced organisms into the blood stream at intervals. It therefore seemed fair to assume that, if the focus could be found and if it could be eradicated by surgical intervention, the patient would have a good chance of recovery. However, when there is indubitable evidence of involvement of the heart valves, the prognosis is hopeless.

In attempting to discover the location of the focus, one must bear in mind that the pathologic process of gonococcal infections is centered mainly in the genital organs, and, in the female, most often in the glands of the cervix and in the fallopian tubes. Very often, as in the case reported, and in that of Wheeler and Cornell, the organism may be present in the blood stream in sufficient numbers to cause severe constitutional reactions, yet locally, in the cervix and tubes, there may be nothing to indicate an inflammatory process. This may be evidence of a lowered virulence of the organism itself or of increased local resistance of the tissues.

It is well known that the streptococcus and the staphylococcus may produce an intermittent bacteremia when the underlying pathologic process is an infected thrombus in a blood vessel. Innumerable cases have been reported of rapid recovery following either ligation of an infected vein or ligation plus removal of an infected thrombus. It seems reasonable to suppose that the same pathologic condition was present in the case here reported, although this was not proved by microscopic section. It would seem fair to assume that by the operation performed the blood vessel focus was eradicated. It was probably present either in the veins arising from the cervix or farther out in the broad ligaments.

CONCLUSIONS

1. In certain cases of gonococcal bacteremia in women there may be an intermittent blood stream invasion. At the same time there may be little or nothing in the history, physical examination and clinical course to indicate the presence of a focus in the cervix, uterus or fallopian tubes.

2. The cause of an intermittent bacteremia presumably is a local focus with blood vessel involvement.

3. Operation in such cases should be considered. Timely and appropriate surgical intervention may offer the only chance of recovery.

50 East Seventy-Seventh Street.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. W. A. PUCKNER, Secretary.

PANTOPON-ROCHE OMITTED FROM N. N. R.

Pantopon-Roche (Pantopium Hydrochloricum), marketed by Hoffmann-La Roche, Inc., is a mixture of the hydrochlorides of the alkaloids of opium containing 50 per cent of anhydrous morphine hydrochloride. It was accepted for New and Nonofficial Remedies in 1915. In accepting the product, and repeatedly thereafter the Council has insisted that the firm avoid in its advertising any claim that Pantopon-Roche is possessed of essential properties lacking in morphine. The Council has been obliged, however, to remind the firm that its advertising should not contain this claim either directly or by inference; and the firm has repeatedly signified willingness to abide by this condition.

Recently the following circular letter of Hoffmann-La Roche, Inc., was forwarded to the Council on Pharmacy and Chemistry by a physician:

"September, 1930.

"Dear Doctor:

"So you really thought that patient you saw yesterday in violent pain could only obtain relief from an opiate? Well, without doubt, you were right, for in cases of that sort suffering from acute pain, an opiate is certainly a God-send.

"But, when you pulled out your syringe and were preparing your hypo solution of morphine, did it occur to you just why you resort to morphine in such cases? We dare say not, for you have been using it for years thinking that there is nothing superior to morphine when you are confronted with painful conditions that demand the opiates.

"Now, frankly, have you ever thought that there might be something other than morphine worthy of your consideration when you are called upon to use an opiate? You read the journals and attend medical meetings. What about Pantopon? Would this Roche narcotic be so strongly and continuously advocated in place of the old drug, morphine, if it did not possess some striking advantages?

"Why not make use of our offer to place a supply of Pantopon, in both hypodermic and oral forms, in your hands? If you do, you will soon find that you will not only be using Pantopon in place of morphine but also advocating it among your colleagues.

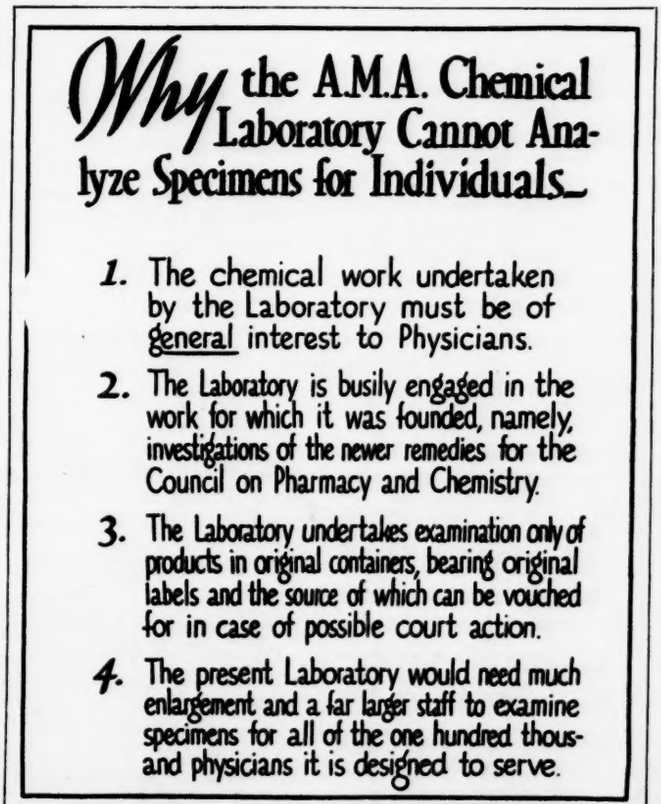
"Sincerely yours,

"HOFFMANN-LA ROCHE, Inc.
"ELMER H. BOBST,
"Executive Director.

"P. S.—Please see that you send us one of the 1923 Series, Federal Narcotic Orders, properly filled out and *do not forget to sign it.* The supply of Pantopon goes with our compliments. In event you do not have the narcotic form return the card to us, anyhow, so that we can at least send you a very interesting booklet on the drug that is replacing morphine."

The intent of this letter to indicate that the action of Pantopon-Roche is essentially different from that of morphine is plain. Furthermore, the letter fails to apprise the physician of the identity of the product, namely, that it is a mixture of the hydrochlorides of opium alkaloids, containing 50 per cent of anhydrous morphine hydrochloride.

From this continued infraction of the condition on which the product was accepted, it is evident that despite repeated expression of good faith the firm cannot be depended on to market Pantopon-Roche with claims which make it acceptable for New and Nonofficial Remedies. The Council therefore rescinded the acceptance of Pantopon-Roche.


Why the A.M.A. Chemical Laboratory Cannot Analyze Specimens for Individuals
1. The chemical work undertaken by the Laboratory must be of general interest to Physicians.
2. The Laboratory is busily engaged in the work for which it was founded, namely, investigations of the newer remedies for the Council on Pharmacy and Chemistry.
3. The Laboratory undertakes examination only of products in original containers, bearing original labels and the source of which can be vouched for in case of possible court action.
4. The present Laboratory would need much enlargement and a far larger staff to examine specimens for all of the one hundred thousand physicians it is designed to serve.

A reduced reproduction of a poster which was shown in the A. M. A. Chemical Laboratory exhibit at the eighty-second Annual Session of the American Medical Association at Philadelphia, June, 1931. This poster explains why the Laboratory cannot undertake chemical work for individuals.

PERNOCTON NOT ACCEPTABLE FOR N. N. R.

Pernocton, stated to be a 10 per cent solution of the sodium salt of the secondary butyl-beta-bromallyl barbituric acid, was submitted for consideration of the Council by Riedel-de Haen, Inc. The product is proposed for intravenous injection for production of "Pernocton sleep." Since the name Pernocton is therapeutically suggestive, the firm proposed to replace it with the name "Pernoston" and requested consideration of the product under the latter name; however, advertising as late as May, 1931, still bears the name Pernocton.

The Council's referee examined more than fifty papers on Pernocton and informally offered certain criticisms of the advertising to the Riedel-de Haen company. In reply the firm stated that all the papers cited by the referee had appeared in 1928, since which time great improvements have been made in the methods of administration. So far as the referee was able to determine, however, the only improvement is in recommending smaller doses, because the former doses had proved too dangerous. According to various writers, Pernocton had caused numerous deaths. Riedel-de Haen, Inc., submitted a list of 139 references, many of which the referee had read. The referee cannot now undertake an analysis of all the papers, but he subjected the following three recent papers submitted by Riedel-de Haen to a critical analysis:

Kautz, F. A. S.: "Pernocton": A Hypnotic and Amnesic Agent (*J. Med.*, March, 1931): In this paper Kautz reiterates many times that Pernocton is not used as an anesthetic but only to produce sleep. However, the doses used by him—up to 6.6 cc. with an additional 2.2 cc. if necessary after a few hours—are those which evidently produce narcosis.

McKesson, E. I., and McCarthy, K. C.: A Comparison of Sodium Amytal and Pernocton as Preanesthetic Hypnotics (*Brit. M. J.*, Nov. 29, 1930): In this paper the authors state that "when the patient becomes relaxed so that he cannot be roused by questions or gentle shaking, and respirations are even, regular and machine-like with gentle snoring, we assume that we are entering the stage of hypnosis." It is obvious that, when a patient cannot be awakened by questions or gentle shaking, when the respiration is machine-like, with gentle snoring, that patient is in narcosis and not in a condition of physiologic sleep.

Friedlaender, Bernard: Pernocton Sleep: Its Surgical Use and Therapeutic Indications (*Am. J. Surg.* **11**:485 [March]

1931): This paper embraces fourteen pages, of which four are devoted to a bibliography of 195 references, only 5 of which, however, are mentioned in the text. Of the eight pages of text, apparently less than one is original with the writer, the remainder being taken, apparently, from a discussion of the literature in which reference is made to thirty-six authors, only five of which, however, are mentioned in the bibliography. This part of the paper has the appearance of having been prepared by some one other than Friedlaender. Friedlaender gives a table (approximately one-sixth page) of 1,200 operations, and eight paragraphs of conclusions equal to about half a page, which is, apparently, all that he has contributed to this himself. This paper was sent by Riedel-de Haen, Inc., and has the appearance of having been largely prepared by the manufacturer's agent, though obviously one cannot say that that is the case. Nevertheless, when a writer mentions 31 papers, not one of which is included in the bibliography of 195 references, it is difficult to avoid the conclusion mentioned. Everywhere the writer mentions "pernocton sleep" but the text shows clearly that he was using doses which produced light narcosis, and he presents no evidence by which the advantages or disadvantages of Pernocton may be determined. This is true of the other two papers; such papers as these fail to show a proper critical attitude and lend themselves readily to use as advertising propaganda to those who do not take the trouble to analyze the literature carefully. Since these three papers are the only ones submitted to the Council, it is fair to assume that they are representative of the later literature of that subject.

The Council declared the name Pernocton therapeutically suggestive and held the product, whether marketed as Pernocton or as Pernoston, unacceptable for New and Nonofficial Remedies for lack of critical evidence that routine intravenous injection of potent narcotics is desirable or safe.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

GOLD MEDAL FLOUR "KITCHEN TESTED"

Manufacturer.—Associate companies of General Mills, Inc., Minneapolis, Minn.

Description.—A moderately "strong" hard-wheat patent flour designed for general baking purposes in the home.

Manufacture.—This is a "medium strength" hard wheat flour designed primarily for "all purpose" home use; made from selected hard wheats raised in various sections of the country. The manufacture involves three distinct operations: (1) storage of the various types of grain with characteristic baking values and their proper blending to yield a flour of desired characteristics; (2) the cleaning and conditioning of the grain in preparation for milling; (3) the milling of the wheat and the separation of the desired flour portions. The blending of the wheat types is in accordance with the results of analytic, "experimental milling" and baking. The cleaning consists of removal of foreign materials and washing with water. The cleaned wheat is "tempered" by soaking in water to establish the proper moisture content for satisfactory milling. The milling consists essentially of alternate grinding and sifting processes which remove the bran and germ and reduce the endosperm to a fine flour.

The milled flour is bleached and treated to improve the color and baking quality. The bleaching agent is composed of benzoyl peroxide mixed with calcium phosphate (dosage 1 part to 50,000 parts of flour). The "improving agent" is essentially nitrogen trichloride (dosage from 1.5 to 3 Gm. for each 196 pounds). The final treated flour is packed in paper or cloth bags.

The flour selected for this brand is tested daily by the laboratory and the baking kitchen. The laboratory tests aid in controlling mill operations; the baking tests are to assure uniform baking results in the home.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	13.0 –14.5
Ash	0.38– 0.44
Fat (direct ether extraction method)	0.8 – 1.2
Protein (N × 5.7)	9.0 –12.0
Crude fiber	0.3 – 0.5
Carbohydrates (by difference) other than crude fiber	76.5 –71.4

Calories.— 3.44– 3.49 per gram
97.7 –99.4 per ounce

Claims of Manufacturer.—A good quality "all purpose" flour for use in home baking; standardized in baking characteristics for uniform performance under normal home baking conditions.

GOLD MEDAL FLOUR
"Kitchen-Tested"—Self Rising Flour

Manufacturer.—Associate companies of General Mills, Inc., Minneapolis.

Description.—A self rising flour. A mixture of patent flour (Gold Medal Flour—"Kitchen-tested"), baking powder containing monocalcium acid phosphate and sodium bicarbonate; and table salt.

Manufacture.—The flour, sodium bicarbonate and sodium chloride are mixed in a flour mixer for a definite period. The monocalcium acid phosphate is added and the mixing continued for a second definite period until homogeneous. The completed mix is packed in bags by automatic filling machines.

The self rising mix is regularly tested to assure proper mixing.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	13.0—14.5
Ash	4.0— 4.0
Fat (ether extract)	0.8— 1.2
Protein (N × 5.7)	9.0—12.0
Crude fiber	0.3— 0.5
Carbohydrates (by difference) other than crude fiber	72.9—67.8

Calories.— 3.30– 3.35 per gram
94.0 –95.1 per ounce

Claims of Manufacturer.—Gold Medal Flour "Kitchen-tested" —Self Rising Flour contains baking powder leavening and is especially adapted for cakes, biscuits and pastry baking.

GOLD MEDAL FLOUR "KITCHEN TESTED"
Phosphate Added

Manufacturer.—Associate companies of General Mills, Inc.

Description.—A moderately "strong" hard-wheat patent flour admixed with 0.5 per cent monocalcium acid phosphate; adapted to requirements of the Southern markets.

Manufacture.—Monocalcium acid phosphate to the extent of 0.5 per cent of the final mixture is added to the regular Gold Medal Flour "Kitchen-Tested" and thoroughly mixed in a batch mixer.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	13.0–14.5
Ash	0.8– 0.8
Fat (ether extract)	0.8– 1.2
Protein (N × 5.7)	9.0–12.0
Crude fiber	0.3– 0.5
Carbohydrates (by difference) other than crude fiber	76.1–71.0

Calories.— 3.43– 3.48 per gram
97.4 –97.8 per ounce

Claims of Manufacturer.—A good quality flour containing added monocalcium acid phosphate to counteract the addition of excessive quantities of baking soda in biscuit baking and intended especially for Southern markets.

WALKER'S BIG DANDY BREAD AND WALKER'S REDI-SLICED BREAD

Manufacturer.—Walker Bread Company, Fort Worth, Texas.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, 65 per cent patent flour of Southwest wheat, water, yeast, and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, are mixed in a high speed mixer. The

sponge dough is fermented for from four to five hours, after which are added flour, water, salt, sucrose, malt syrup, honey, lard, sweetened condensed skim milk and a mixture of calcium phosphate, ammonium phosphate, calcium peroxide and corn starch to make the completed dough, which is cut into pieces of desired weight. The pieces are fermented for a short time, molded into loaf form, panned, further fermented, baked for from thirty to thirty-five minutes, cooled and wrapped in wax-paper.

The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	34.6
Ash	0.9
Fat (direct ether extraction method)	1.6
Protein (N × 6.25)	9.0
Crude fiber	0.2
Carbohydrates (by difference) other than crude fiber	53.8

Calories.— 2.66 per gram
75.5 per ounce

Claims of Manufacturer.—A bread of good quality.

CERTIFOODS CERTIFIED NURSERY FOODS—GREEN PEAS

(Sieved). Vitamin Content Guaranteed

Manufacturer.—Curtice Brothers Co., Rochester, N. Y., subsidiary of the Maltine Company, New York.

Description.—Canned sieved green peas. The minimum content of vitamins A, B and C is certified and expressed on the label in vitamin units. No sugar or salt is added.

Manufacture.—Manufactured by essentially the same procedure as that described for this company's Sieved Green Beans.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	87.0
Total solids	13.0
Ash	0.38
Fat (ether extract)	0.5
Protein (N × 6.25)	4.3
Reducing sugars before inversion as dextrose	0.0
Reducing sugars after inversion as invert sugar	2.0
Sucrose	1.9
Crude fiber	0.7
Total carbohydrates (by difference) other than crude fiber	7.1
Calcium (Ca)	0.02
Phosphorus (P)	0.07
Iron (Fe)	0.003

Calories.— 0.50 per gram
14.2 per ounce

Vitamins.—The product is guaranteed to contain not less than 300 units of vitamin A (Sherman method), 5 units of vitamin B (complex) (Sherman and Spohn method) and 3 units of vitamin C (Sherman-LaMer method) per ounce.

Claims of Manufacturer.—Essentially the same as those for this company's Sieved Green Beans.

CERTIFOODS CERTIFIED NURSERY FOODS—GREEN BEANS

(Sieved). Vitamin Content Guaranteed

Manufacturer.—Curtice Brothers Company, Rochester, N. Y., subsidiary of the Maltine Company, New York.

Description.—Canned sieved green beans. The minimum content of vitamins A, B and C is certified and expressed on the label in vitamin units. No sugar or salt is added.

Manufacture.—Green string beans, Refugee variety, are harvested, pulled, snipped and delivered to the packing plant all on the same day. The cut beans are blanched for five minutes at 87 C., washed with cold water, packed solid in number 10 tins and covered with salt free boiling water; the tins are sealed and processed for forty minutes at 116 C., stored, and puréed as required.

For puréeing, the canned beans are emptied into a steam jacketed kettle, heated slowly to 71 C. with slight stirring, and are pumped into a cyclone in a glass lined chamber containing nitrogen atmosphere only. The mass is broken down to pass a 0.033 inch screen and falls to the chamber bottom; it is drawn off into the bowl of filling machines and held at 71 C. by means of a small steam coil during the filling of the cans. The cans (4½ ounce size) are immediately sealed and processed for forty minutes at 115 C.

The entire puréeing process is accomplished in an atmosphere of nitrogen gas to protect the vitamin content. No air is permitted to enter the equipment during the operations.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	94.8
Total solids	5.2
Ash	0.4
Fat (ether extract)	0.1
Protein (N × 6.25)	1.0
Reducing sugars before inversion as dextrose	1.3
Reducing sugars after inversion as invert sugar	1.7
Sucrose (by copper reduction)	0.2
Crude fiber	0.6
Carbohydrates (by difference) other than crude fiber	3.1
Calcium (Ca)	0.04
Phosphorus (P)	0.02
Iron (Fe)	0.003

Calories.— 0.17 per gram
4.8 per ounce

Vitamins.—The product is guaranteed to contain not less than 250 units of vitamin A (Sherman method), 3 units of vitamin B (complex) (Sherman and Spohn method), and 2 units of vitamin C (Sherman-LaMer method) per ounce.

Claims of Manufacturer.—These puréed beans are prepared by scientific procedure for maximum protection of the natural vitamin content. The vitamin values are constantly checked and minimum quantities determined are expressed in units on the label. The product is recommended for use in infant feeding and for convalescent and special diets in which a smooth diet is indicated.

JERRY'S KEW-BEE REDI-SLICED BREAD

Manufacturer.—Jerry's Bakery Company, Terre Haute, Ind.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, a mixture of 70 per cent of short patent flour of Southwest wheat, water, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate are mixed in a high speed mixer. The sponge dough is fermented for from four to six hours, after which are added flour, water, salt, sucrose, lard and sweetened condensed skimmed milk to make the completed dough, which is cut into pieces of desired weight. The pieces are fermented for a short time, molded into loaf form, panned, further fermented, baked for from thirty to thirty-five minutes, cooled, and wrapped in wax-paper.

The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	36.5
Ash	1.9
Fat (direct ether extraction method)	0.7
Protein (N × 6.25)	8.5
Crude fiber	0.2
Carbohydrates (by difference) other than crude fiber	53.1

Calories.— 2.53 per gram
71.9 per ounce

Claims of Manufacturer.—A bread of good quality.

DROMEDARY CRANBERRY SAUCE (STRAINED)

Manufacturer.—The Hills Brothers Company, New York.

Description.—A cooked, sweetened, sieved cranberry sauce.

Manufacture.—Cape Cod cranberries graded on the basis of flavor, color and soundness are cooked in boiling water in tin-lined kettles, and sieved through monel metal screens. The screened mass is mixed with sugar, cooked in aluminum kettles to a sugar concentration of from 43 to 45 per cent (by refractometer reading) and packed hot (90 C.) in enamel-lined cans.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	54.6
Ash	0.3
Fat (ether extract)	0.3
Protein (N × 6.25)	0.2
Reducing sugars, as invert	39.3
Sucrose (copper reduction method)	4.8
Starch (acid hydrolysis method)	0.1
Crude fiber	0.4
Carbohydrates (by difference) other than crude fiber	44.2
Titratable acidity as citric acid	0.8

Calories.— 1.80 per gram
51.1 per ounce

Claims of Manufacturer.—A cranberry sauce of good quality.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, OCTOBER 3, 1931

FOODS AND FOOD ADVERTISING

Today advertising of foods, separate from the package container, is not controlled by any food statutes, and indeed is quite free of any efficient control. The writer of advertising for food products, aside from such limited knowledge of foods and nutrition as he may possess, has only a versatile vocabulary and his conscience as guides in dramatizing the virtues of the products he proclaims to the public. The god of Advertisia is not accuracy but sales reaction. Under these conditions, advertising for food products began to approach the tales of Hans Christian Andersen and the brothers Grimm as examples of what could be accomplished in legend and fantasy. Into this mass of mingled truth and deception entered the Committee on Foods of the American Medical Association. It is not surprising that its initial steps should have been greeted with apprehension and bitter deprecation by some of the organs of the food industry, of business and of advertising. If the food industry and food exploitation are actually so pure that they do not need reformation, why anticipate any hazard from a scientific investigation? The discussions of the work of the committee have not, however, acclaimed the wholly righteous character of the industry. They have answered the announcement of the creation of the Food Committee only with the argument that the food industry is already too much controlled. *Printers' Ink*, that stanch defender of advertising—right or wrong—replies only by saying that it is the first duty of the American Medical Association to rid the public of incompetent physicians. What *Printers' Ink* wants apparently is a list of blue ribbon doctors. Its editor obviously does not realize that through the creation of membership in the American Medical Association the organization has such a list and that this list is publicly available through the American Medical Directory.

The reason for the entrance of the American Medical Association into the food field is the development of scientific knowledge during the last twenty years that has changed the entire attitude of both the public and the profession toward the food question. The necessity for understanding the importance of minerals in relationship to human health, the necessity of the vitamins for the prevention of deficiency diseases and for the insurance of adequate growth and resistance to disease, the development of new knowledge regarding various types of proteins, carbohydrates and fats have made foods something beyond mere builders of energy for the human body. The organs of the advertising and food industries must realize that foods today occupy an equal place with drugs, biologic products and surgery in the control of human ailments.

Notwithstanding these facts, however, the medical profession need not have concerned itself with the propaganda made for food products had not the advertising industry forced the medical profession into the situation. It was not the medical profession that originated the phrases "health food," "physicians recommend," "body builder" and "food tonic." These slogans developed in the minds of advertising copy writers. In 1925, before the Committee on Foods was established, advertising of foods approximated closely the amount of space devoted to the advertising of drugs and exceeded the space devoted to biologic preparations in The Journal of the American Medical Association. Since 1905 the Council on Pharmacy and Chemistry has advised concerning the advertising of drug products. When it was realized that special knowledge was demanded to pass on the claims made for foods in the advertising pages, it became necessary to appoint a special committee for this purpose. The Committee on Foods was established to protect the readers of The Journal against improper claims made for foods. If the medical profession required such protection, how much more was the protection necessary for the average layman to whom the same claims were made as were made to physicians.

Only those who have been actively associated with the Committee on Foods since its inception can realize the vast amount of good already accomplished. Some of the fundamental principles established by the committee that deserve recognition include: 1. The appearance on the label of any food product of a descriptive statement showing exactly what the product is. The food industry is flooded with the use of fanciful titles for products which do not indicate in any way their actual ingredients. How is the person who happens to be allergic or sensitive to wheat, barley, eggs or some certain food product to know whether or not the food he eats includes any of these substances? 2. Since vitamins are of the greatest importance for the maintenance of health and for adequate growth, knowledge of vitamin content relative to the known content of substances rich in vitamins is important. When vitamin claims are made, advertising must state the vitamin content in relationship to these known substances. Since there are several processes for enhancing vitamin D potency in various food products, purchasers are entitled

to know not only the process by which the vitamin content is enhanced but also the extent of this enrichment. 3. Even bread, the staff of life, has been subjected to such sophistication in various places as to make it necessary for the purchaser to know whether or not the bread he buys is what it is claimed to be.

The Committee on Foods up to June had studied some 500 products, of which only 128 had been accepted. By September it had studied 541 products, of which 165 had been accepted. The primary reason for this rapid progress has been the willingness of manufacturers who have submitted products to the committee to change labels and to correct advertising claims in order to make them acceptable. This willingness has been displayed not only by executives of some of the great food corporations but also by executives of smaller firms producing a single product. Such cooperation is encouraging. It signifies great good for the American people. It signifies particularly that the apprehensions of advertising agencies and of publications in the advertising field as to the work of the committee are wholly unwarranted.

RAW MILK VERSUS PASTEURIZED MILK

The beneficial influence on the public health which has accrued from the widespread practice of pasteurization of milk and dairy products has left little doubt in the minds of most public health workers as to the necessity for the more or less universal adoption of this simple preventive measure. Furthermore, the enormous increase in the production and consumption of milk and milk products has introduced new problems relating to its safety and wholesomeness. The responsibility of public health officials, milk distributors and dairymen in securing a clean and safe milk supply is indicated by the constantly recurring milk-borne epidemics in this country. During the six-year period from 1924 to 1929, 258 milk-borne epidemics were officially reported by state health officers. These epidemics involved 10,906 persons and resulted in the death of 371.

To the embarrassment of those public health officers who have succeeded, often after a bitter struggle, in securing the passage of laws requiring the pasteurization of milk and dairy products, reports of alleged superiority of raw milk over pasteurized milk appear from time to time. A recent example is an article by Scott and Erf [1] of Ohio State University, who conclude that milk subjected to heat loses its hematogenic and growth-promoting properties; that rats fed on commercial pasteurized milk fortified by cod liver oil and tomato juice failed to equal in growth and development rats fed on the milk of cows given a diet high in mineral vitamins; that the pasteurized milk from cows fed on a special diet rich in minerals does not produce the anemia usually reported as occurring in the albino rat following an exclusive milk diet. The influence of the diet of cows on the quantity and quality of the milk has been a matter of common knowledge for many years. The animal chosen for these experiments, the white rat, is one that is known to develop anemia when fed an exclusive milk diet. It is, however, hazardous to conclude that the same thing which happens to rats will happen to human beings, particularly infants, who are fed an exclusive milk diet. There is no convincing evidence at hand to indicate that the feeding of raw milk, pasteurized milk, or raw or pasteurized milk which has been boiled, has any appreciable influence on the blood picture of infants, children or adults on a milk diet. Many writers on infant nutrition recommend boiling cow's milk in order to destroy disease-producing organisms and for its favorable influence on the curd.

There is evidence that the antiscorbutic vitamin is largely destroyed by pasteurization or boiling. When one realizes that the amount of vitamin C in raw milk is insufficient to protect against scurvy and must be supplied by vitamin-containing adjuvants, this factor assumes little importance.

In the report of the Committee on Milk of the Conference of State and Provincial Health Authorities of North America,[2] attention is particularly directed to the Scott-Erf report. The committee emphasizes the fact that, in all but one of the four experiments conducted by these authors, the raw and the pasteurized milk used for experimental purposes were not from the same sources and therefore were not comparable. The raw milk was obtained from cows to whose regular feed had been added a "special complex mineral mixture," while the pasteurized milk was procured from a corner grocery store. Apparently no attempt was made to determine the diet of the cows supplying the commercial pasteurized milk.

The committee's critical analysis of the Scott-Erf report led to these conclusions:

> It would, therefore, be unscientific to draw any conclusions from these experiments with reference to the effect of pasteurization on the nutritive value of milk. In order to draw valid conclusions it is necessary to use the same milk for both series of animals, making sure that the only difference between them is the factor of pasteurization. This was done in only one of the four experiments and the number of animals to which the pasteurized milk was fed in this case was only eight, whereas the number of animals to which the corresponding raw milk was fed was fifty-two. Such a sweeping conclusion as is contained in the title of this paper should not be drawn from experimental results on only eight animals. In fact, the paper does not contain satisfactory evidence that the relatively slight difference between the average weights of the raw and pasteurized groups may not have been within the range of probable experimental error.

In view of the fact that reprints of the Scott-Erf report have been widely distributed by raw milk dealers in an effort to discredit pasteurized milk in the mind of the consumer, the necessity for close scrutiny of the evidence adduced by antagonists of pasteurization is apparent.

1. Scott, Ernest; and Erf, L. A.: Ohio Tests Prove Natural Milk is Best, Jersey Bull. & Dairy World, Feb. 11, 1931.

2. Brown, E. G.: Report of Committee on Milk: Conference of State and Provincial Health Authorities of North America, Pub. Health Rep. **46**: 1455 (June 19) 1931.

ALLERGIC REACTION IN POLIOMYELITIS

The Pirquet reaction in tuberculosis and the Schick and Dick tests in diphtheria and scarlet fever may be supplemented by a similar local skin test for individual susceptibility to poliomyelitis. While Jungeblut [1] of Columbia University is extremely cautious in his clinical predictions and emphasizes the imperfections in his present test material and arbitrary dosage, his preliminary studies on normal, convalescent and artificially immunized monkeys [2] will lead clinicians to await future perfection and standardization of his technic. Jungeblut has apparently demonstrated that there are true allergic phenomena in poliomyelitis, an observation which future epidemiologists may conceivably regard as an epoch-making contribution to research on poliomyelitis.

Jungeblut's attempt to demonstrate such allergic phenomena was based on the experimental observations of the British investigators Fairbrother and Hurst [3] and the American investigators Kramer, Hendrie and Aycock.[4] These pathologists studied the febrile reactions following intracerebral inoculation of poliomyelitis virus in monkeys. They did not observe any particular change in rectal temperature during the first five to seven days after such inoculation but noted a sharp rise in body temperature from twenty-four to forty-eight hours before the onset of paralytic symptoms. Dr. Jungeblut, therefore, made similar temperature studies with convalescent monkeys reinoculated with the original virus strain from five to eighteen months after the cessation of acute symptoms. In place of the usual five to seven days afebrile incubation period, these monkeys, which recovered, gave an almost immediate fever response, the rectal temperature usually being raised from 3 to 5 degrees by the end of two hours. The temperature remained at approximately this level for from twenty-four to forty-eight hours. A similar prompt allergic fever was produced by injecting the original virus strain subcutaneously. Such injections, however, did not produce a demonstrable local skin reaction, nor were local allergic reactions caused by introducing the virus into the conjunctiva. Tests with monkeys previously vaccinated to poliomyelitis by the subcutaneous, intraperitoneal or intrarectal routes gave delayed allergic temperature responses, curves midway between those of late convalescent monkeys and normal controls. This result suggests that the Jungeblut reaction may in time be used not only as a qualitative but also as a quantitative test.

To adapt his reaction to clinical medicine, Jungeblut made studies of the febrile reactions with heat-killed poliomyelitis virus (65 C., sixty minutes). Reactions but slightly less than those produced with the living virus were recorded with these noninfectious agents. The test material finally selected for clinical use was a Berkefeld filtrate of a 5 per cent heat-killed virus-cord emulsion, with a similar preparation of normal monkey cord as a control, the test dose being 0.2 cc. injected intracutaneously. Thus far twenty-seven persons with a proved history of a previous attack of poliomyelitis have been tested by him. Febrile reactions were not noted in these tests. All of the twenty-seven subjects, however, reacted to the filtrate with a typical local allergic redness and swelling of the skin, increasing steadily from the fifth to the twenty-fourth hour. The slight earlier urticarial reaction which appeared in some children in the control injection subsided over night. The specific reaction was easily differentiated the next morning.

Dr. Jungeblut has not yet studied the relationship of his specific allergic skin reaction to the virucidal power of the patient's serum, nor are his data on normal individuals as yet sufficiently extensive to warrant detailed conclusions. He reports, however, a preponderance of positives among normal adults as compared with younger children, an observation in line with the known epidemiology of this disease.

1. Jungeblut, C. W.: Proc. Soc. Exper. Biol. & Med. **28**: 1072 (June) 1931.
2. Jungeblut, C. W.: J. Exper. Med. **53**: 159 (Feb.) 1931.
3. Fairbrother, R. W., and Hurst, E. W.: J. Path. & Bact. **33**: 17 (Jan.) 1930.
4. Kramer, S. D.; Hendrie, K. H., and Aycock, W. L.: J. Exper. Med. **51**: 933 (June) 1930.

Current Comment

WHAT IS CLINICAL INVESTIGATION?

The expression "clinical investigation" is one that has attained considerable prominence since the beginning of the present century. Its implications are by no means clear. Does it refer to some unique mode of approach to the scientific problems that confront the student of disease? Does it rather imply a resourceful integration of the technics of the physiologist, biochemist and pathologist in an attack on the maladies of mankind? Or is it perchance merely the vague expression for the never ending search for means of the prevention, amelioration or cure of disease? Doubtless all these considerations have entered into the spirit of so-called clinical research, so that it has acquired a connotation as indefinite and comprehensive as has hygiene. In attempting to elucidate what he regards as true ideals of the clinical investigator, the president of the American Society for Clinical Investigation, Dr. Francis G. Blake [1] of Yale University, recently pointed out that the characteristic of research in clinical medicine lies not in the technic or the tools used but rather in the methods of approach. It is not primarily the search for disordered functions such as the devotees of the so-called preclinical sciences might be expected best to promote. Of course, as Blake admits, the clinical investigator must have recourse to animals to test his hypotheses, must go to the laboratory and become temporarily a pathologist or bacteriologist, a chemist or physiologist. That is, however, merely a temporary rôle from which he must sooner or later turn to that real consideration of

1. Blake, F. G.: Clinical Investigation, Science **74**: 27 (July 10) 1931.

the genesis of disease involving an understanding of all the conditions or circumstances under which it develops. This means a study of the interplay of specific agents, environmental factors, and human susceptibilities. To have discovered the tubercle bacillus, its biologic characteristics and chemical constitution, Blake remarks by way of illustration, does not explain tuberculosis; to have learned the environmental factors that favor its occurrence still leaves something wanting. The characteristics, susceptibilities and reactions of the host must also be known. The interrelationships of these three factors, and perhaps others, must be studied, Blake concludes, before one can arrive at an adequate understanding of the pathogenesis of the disease. This point of view was ably illustrated by the studies of Opie [2] in this field.

Association News

ABSTRACT OF MINUTES OF MEETING OF BOARD OF TRUSTEES HELD IN CHICAGO, SEPT. 18 AND 19, 1931

The Board of Trustees met in Chicago on Friday and Saturday, September 18 and 19, 1931.

DATE OF NEW ORLEANS SESSION

The week of May 9-13 was officially approved for the New Orleans Session of the Association in 1932.

NEW EDITORIAL STAFF FOR QUARTERLY CUMULATIVE INDEX MEDICUS

A new editorial staff for the *Quarterly Cumulative Index Medicus*, consisting of Dr. Morris Fishbein, Miss Marjorie Hutchins (librarian), Dr. George H. Simmons, Dr. Fielding H. Garrison and a fifth member to be selected by the four named, was appointed.

RETIREMENT OF DR. NATHAN P. COLWELL

Dr. Nathan P. Colwell, who has served as secretary of the Council on Medical Education and Hospitals since its creation, and who has been on leave status for several months on account of illness, was permanently retired.

REQUEST FOR SURVEY OF STATISTICS ON MATERNAL AND INFANT MORTALITY

Consideration was given to the methods of compilation and interpretation of comparative statistics on maternal and infant mortality in the various countries of the world, and plans were discussed for securing a careful study of such statistics, for the purpose of definitely determining whether infant and maternal mortality in the United States is as much greater than in other countries as it is frequently stated to be.

COMMITTEE ON PREVENTION OF POISONING

A committee of five, consisting of Drs. Roger I. Lee, Cary P. McCord, Waller S. Leathers, Stanley H. Osborn and George H. Bigelow, was appointed to cooperate in the preparation of a bill for the enforcement of proper regulations with respect to various poisonous substances used in industry and in the home.

FURTHER DIVISION OF SPECIALTIES IN AMERICAN MEDICAL DIRECTORY NOT TO BE MADE AT THIS TIME

Consideration was given to a request for further specific division of specialties in the American Medical Directory, and it was deemed inadvisable to accede to this request at the present time.

FOURTH PUBLIC HEALTH CONFERENCE POSTPONED

Owing to the present financial depression, it was deemed advisable to postpone the Fourth Public Health Conference until some future date.

2. Opie, E. L.: The Harvey Lectures, 1928-1929.

BARBITURIC ACID DRUGS

On recommendation of the Council on Pharmacy and Chemistry, the Board of Trustees requested the Bureau of Legal Medicine and Legislation to take whatever steps may be necessary to secure an amendment of existing laws, federal and state, as well as municipal, if in the opinion of the Bureau that is desirable, to the end that the habit-forming drug barbituric acid and its derivatives shall be added to the present list that require declaration of the presence of those drugs on the label.

DR. HOWARD T. KARSNER ELECTED TO MEMBERSHIP ON COUNCIL ON PHYSICAL THERAPY

On nomination from the Council on Physical Therapy, Dr. Howard T. Karsner was elected to membership on the Council on Physical Therapy to succeed Dr. Aldred Scott Warthin (deceased).

DISCHARGE OF ASSOCIATION'S REPRESENTATIVE ON COMMITTEE ON ATMOSPHERIC POLLUTION BY AUTOMOBILE EXHAUST GAS

As the Association's Committee on Poisonous Gases published a thorough report on the hazards of carbon monoxide, and as a new committee has been appointed by the Association to deal with matters of this kind, the Board decided to discharge its representative on the inter-societies committee on Atmospheric Pollution by Automobile Exhaust Gas, under the auspices of the American Chemical Society.

PARTICIPATION IN CELEBRATION OF TWO HUNDREDTH ANNIVERSARY OF THE BIRTH OF GEORGE WASHINGTON

The resolution from the United States Commission for the Celebration of the Two Hundredth Anniversary of the Birth of George Washington, which was referred to the Board by the House of Delegates, was given consideration, and it was decided that the Association cooperate in the movement so far as it may be possible to do so.

PROPOSED UNIFORM STATE NARCOTIC CONTROL LAW

The Bureau of Legal Medicine and Legislation was instructed to cooperate with the Commissioner of Narcotics and with state societies in preparing laws governing the use of narcotics.

SCIENTIFIC EXHIBIT

Drs. Ludvig Hektoen and Urban Maes were reelected for three years on the Advisory Committee of the Committee on Scientific Exhibit, and appropriations were made for certain phases of the exhibit to be made at the New Orleans Session.

CONFERENCE OF STATE SECRETARIES AND MEETING OF BOARD OF TRUSTEES

November 12 and 13 was set for the next meeting of the Board of Trustees, and November 13 and 14 for the Conference of State Secretaries.

MISCELLANEOUS BUSINESS

Consideration also was given to routine affairs and to other matters that will come up for discussion at later dates.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday and 10:30 a. m. on Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

October 5. The Pleasures and Perils of Bathing.
October 10. Speech Habits and Personality.

Five minute health talks may be heard over the Columbia Broadcasting System on Monday, Wednesday, Thursday and Saturday, from 12 to 12:05 p. m., Central Standard Time.

The program for the week is as follows:

October 5. Everybody's Business.
October 7. Are You Gambling With Life?
October 8. School Days Should Be Health Days.
October 10. Awakening Dormant Health and Happiness.

CONTRIBUTIONS FOR MEMORIAL SALON IN PERSHING HALL

The sum contributed this week to the Pershing Hall Memorial in Paris brings the total to $2,498.10. The list of those who have contributed during the current week follows:

Roy G. Giles, M.D., Temple, Texas
William L. Hanson, M.D., East St. Louis, Ill.

The following contributors' names are republished, since they were not published correctly in their first printing:

R. F. Peterson, M.D., Butte, Mont.
George H. Ewell, M.D., Madison, Wis.
Col. E. L. Ruffner, M.D., Fort Riley, Kansas
L. F. Bender, M.D., Frankford, Philadelphia, Pa.
J. R. Robison, M.D., Salt Lake City, Utah.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALASKA

Health Supervisor Appointed. — Dr. Frank Samuelson Fellows, passed assistant surgeon of the U. S. Public Health Service, has been appointed district medical director for Alaska, a newly created position. Dr. Fellows, a native of Wisconsin, was graduated from the University of Pennsylvania School of Medicine in 1925 and joined the public health service in 1926. He has served in marine hospitals in Chicago, Norfolk, Va., and New York. In 1928 he had charge of fumigating activities in Puget Sound, Victoria, B. C., Townsend, Wash., and Vancouver, and since May, 1929, has been supervisor of public health activities in the district of Portland, Ore., and along the Columbia River. Alaska has a population of 30,000 natives scattered over an area of 586,400 square miles. The government has in the territory six hospitals, ten physicians and thirty-four nurses.

ARKANSAS

Society News.—Drs. Davis W. Goldstein and John M. Taylor, Fort Smith, addressed the Franklin County Medical Society recently on "Acute Appendicitis" and "Treatment of Syphilis," respectively. —— The Independence County Medical Society was addressed in Batesville, August 10, by Dr. Lorenzo T. Evans, Batesville, on leukemia with report of case, and Dr. Van D. McAdams, Cord, on insect bites.——The September meeting of the Lawrence County Medical Society was held in Imboden; the program consisted of papers by Drs. Thomas C. Guthrie, Smithville, on quinsy; Gustavus A. Warren, Black Rock, differentiation of malaria from typhoid, and Shields Abernathy, Memphis, Tenn., cancer.——Drs. Matthew Wilson Searight, Memphis, Tenn., addressed the Mississippi County Medical Society in Blytheville, September 9, on "Affections of the Cervix"; Joseph D. Cleveland, "Treatment of Burns," and Emmett R. Hall, "Congenital Syphilis."

Committee on Heart Disease.—The officers of the Arkansas Medical Society recently formed a committee on heart disease to act as a clearing house for information on all phases of heart disease in Arkansas. This committee hopes to acquaint physicians of the state with some of the recent advances in the diagnosis and treatment of the disease by the publication of articles in the state journal and by the presentation of papers and the sponsoring of a scientific exhibit at the annual meetings. It is planned to offer opportunity for graduate work. The committee is also seeking the cooperation of other state organizations. According to the *Journal of the Arkansas Medical Society*, the members of the committee on diseases of the heart are Drs. Arthur G. Sullivan, chairman, Hot Springs National Park; Augustus C. Shipp, Little Rock; Arless A. Blair, Fort Smith; Nicholas F. Weny, Little Rock, and Hendric A. Ross, Arkadelphia.

CALIFORNIA

Health Officers Appointed. — Dr. John H. Hutton has been appointed health officer of Calipatria. Dr. Henry S. Rogers will succeed Dr. George R. Hubbell as health officer of Petaluma. It is announced that Avalon, Los Angeles County, is now under the supervision of the Los Angeles County Health Department, and that Willow Glen, Santa Clara County, has come under the supervision of the Santa Clara County Health Department.

Society News.—The annual Conference of California Health Officers was held in conjunction with the meeting of the League of California Municipalities at Del Monte, September 21-24. The program was devoted to the discussion of vacation health, public health nursing and administrative methods.——An executive committee has been appointed by Governor Rolph to carry on the program adopted at the White House Conference on Child Health and Protection. It will be known as the California Committee on Child Health and Protection and will consist of Dr. Giles S. Porter, director, state department of public health; Mrs. Reba Crawford Spivalo, director, state department of social welfare, and Mr. Vierling Kersey, director, state department of education. —— The Alameda County Medical Society was addressed, September 21, in Oakland by Drs. Rossner E. Graham on "Parkinson's Disease"; Warren B. Allen, "Encephalitis," and Lloyd E. Kindall and Albert M. Meads, "Traumatic Rupture of Genito-Urinary Tract." —— Dr. Arthur L. Bloomfield, professor of medicine, Stanford University School of Medicine, San Francisco, gave the opening lecture of the University of Southern California, September 15, on "Some Current Problems in Medical Education."

COLORADO

State Medical Election.—Dr. Edward Delehanty, Denver, was installed as president of the Colorado State Medical Society at its recent annual meeting in Colorado Springs, and Dr. Frank B. Stephenson, Denver, was made president-elect. Other officers elected are Drs. Harry C. Goodson, Colorado Springs; Lanning E. Likes, Lamar; Clarence E. Sidwell, Longmont, and Lawrence L. Hick, Delta, vice presidents; Lorenz W. Frank, Denver, constitutional secretary; Leo W. Bortree, Colorado Springs, treasurer, and Mr. Harvey T. Sethman, executive secretary, reelected.

CONNECTICUT

Hospital News.—A new surgical unit of 125 beds will be added to the New Haven Hospital through a recent bequest of $1,000,000 by Mrs. Sarah Wey Tompkins, according to *Science*. The new building, to be known as the Sarah Wey Tompkins Memorial, will have five floors, with practically all the facilities required for a hospital except operating rooms, which are in the adjoining Farnam Memorial Building. The erection of this building will bring near to completion a plan adopted five years ago for the modernization of the New Haven Hospital.

ILLINOIS

Health Bulletins. — Four new educational bulletins on health, published by the state department of public health, are now available for free distribution in the state. The titles of the bulletins are Tularemia in Illinois, Infantile Paralysis, Animal Experimentation, and Diet, Health and Intelligence.

Society News.—Drs. Robert S. Berghoff and John E. Kelley, Chicago, addressed the Alexander County Medical Society, September 18, on "Syphilis of the Heart" and "Some Forgotten Points in the Technic of Operation for Inguinal Hernia," respectively. —— The McDonough County Medical Society was addressed, September 15, by Drs. Clifford U. Collins and James W. Sours, Peoria, on cervical ribs and newer clinical concepts of blood, respectively.——The Morgan County Medical Society was addressed, September 10, by Drs. James G. Carr, Chicago, on "Rheumatic Heart Disease," and Sumner L. S. Koch, Chicago, on "Infected Wounds with Special Reference to Infected Hands."——Dr. Richard H. Jaffe, Chicago, spoke on "Pathology of Pulmonary Tuberculosis" before the Will-Grundy County Medical Society, September 30.

Chicago

Course in Ophthalmology Postponed. — The Chicago Graduate Course in Ophthalmology, noted in THE JOURNAL, July 4, page 36, will be postponed for one year. Present plans call for the beginning of the course in September, 1932. Applications will be received by the secretary, Dr. Richard C. Gamble, 30 North Michigan Avenue, up to July 15, 1932.

Dr. Evans to Give the Bacon Lectures.—Dr. Herbert M. Evans, professor of anatomy, University of California, Berkeley, will deliver the third series of the Charles Sumner Bacon Lectures, October 8-9, at the University of Illinois College of Medicine. The general subject of the lectures is "The Function of the Anterior Hypophysis." Dr. Evans will speak, Thursday, on "Hormones of the Anterior Hypophysis," and, Friday, on "Relation of the Hypophysis to the Reproductive System."

Academy of Criminology.—The October 8 meeting of the Chicago Academy of Criminology will be devoted to a discussion of prison systems in the United States and Europe. The speakers will be Edwin H. Sutherland, Ph.D., professor of sociology, University of Chicago, "Historical Development of the Prison System in the United States"; Harry M. Fisher, chief justice, Criminal Court of Cook County, "Modern European Prison Systems," and Rodney H. Brandon, director, state department of public welfare, "Modern Prison Program of Illinois." The Chicago Academy of Criminology was organized this year to consider every phase of criminology and allied behavior problems. The principal activity of the academy will be the reading and discussion of scientific papers in monthly meetings. Dr. Sutherland is president of the organization; the vice presidents are Dr. Ludvig Hektoen, director, John McCormick Institute for Infectious Diseases; Dr. Paul L. Schroeder, state criminologist of Illinois and director, Institute for Juvenile Research; Arthur J. Todd, Ph.D., professor of sociology, Northwestern University, and the secretary is Dr. Meyer Solomon, associate in neurology, Northwestern University Medical School.

INDIANA

Open Clinic as Memorial to Psychologist.—A psychologic clinic for the study and treatment of children and adults was to have been opened in Indianapolis, September 1, as a memorial to Herman H. Young, Ph.D., who, before he died, was professor of clinical psychology at Indiana University School of Medicine, and head of the psychologic clinics of the hospitals at the university. The establishment of the Herman H. Young Foundation for research in clinical psychology has been made possible through the generosity of Indianapolis citizens. Dr. Young's widow, Mrs. Mary H. Young, will be director of the institute. The institution will operate on a five and one-half day schedule of examination, reeducation and rehabilitation, for which no charge will be made. Among those who have been appointed as members of an advisory committee are Reuel Clyde White, Ph.D., professor of sociology and director of the bureau of social research, Indiana University, and Drs. Matthew Winters, George J. Garceau and Max A. Bahr. It was stated that social, medical and educational agencies of the city as well as individuals will cooperate in bringing patients to the clinic.

IOWA

Personal.—Dr. Roy G. Barrick, assistant professor of psychiatry at the State University of Iowa College of Medicine, Iowa City, recently accepted an appointment at the Institute for Juvenile Research, Chicago. He will be in charge of mental health work at the Illinois State Penitentiary, psychiatrist at the Joliet Child Guidance Clinic, and assistant professor of criminology at the University of Illinois College of Medicine.

Society News.—The Polk County Medical Society was addressed, September 29, at the Smouse School for Handicapped Children, Des Moines, among others, by Drs. James A. Downing on "Instruction of Deaf Children from the Otologist's Point of View," and Harold J. McCoy, "Conservation of Vision from the Oculist's Point of View."——Dr. Isaac A. Abt, Chicago, will address the Linn County Medical Society at Cedar Rapids, October 8, on "Recent Progress in Poliomyelitis."

KANSAS

Dr. Stafford Appointed Health Commissioner of Virgin Islands.—Dr. Rolla B. Stafford, Hiawatha, sailed from New York, September 16, to assume the position of health commissioner of the Virgin Islands, to which he was recently appointed. Dr. Stafford, a graduate of University Medical College of Kansas City (Mo.), has been health officer of Brown County since 1928. He will have general supervision over all the medical facilities of the islands, including, in addition to several hospitals, dispensaries, clinics for venereal disease and nervous and mental disease, a laboratory service, a leper colony and a poor farm.

KENTUCKY

Society News.—Dr. Ulysses H. Smith and Elmer C. Hume, D.D.S., Louisville, addressed the Harlan County Medical Society, Harlan, August 29, on blood transfusions and lesions of the oral cavity, respectively.——Dr. Ernest B. Bradley, Lexington, addressed the September meeting of the Franklin County Medical Society, Frankfort, on serology.——Pellagra was the general subject of discussion before the Kentucky Valley Public Health Association, Pineville, September 25. Among others, Surg. George A. Wheeler, U. S. Public Health Service, read a paper on "Modern Conception of Pellagra—Its Prevention and Treatment."——Dr. Nelson A. Jett, Covington, addressed the Kenton and Campbell County Medical Society, Dayton, September 17, on "Pathologic Changes During Anesthesia."

MAINE

New England Surgical Society.—Dr. Frank H. Lahey, Boston, was elected president of the New England Surgical Society at the annual meeting in Portland, Maine, September 11-12. Other officers elected are Drs. Carl M. Robinson, Portland, vice president; John M. Birnie, Springfield, secretary; Peer P. Johnson, Beverly, Mass., treasurer, and Walter G. Phippen, Salem, Mass., recorder. The program presented at this session included papers by Drs. George A. Moore, Brockton, Mass., "Color Photography of Surgical Specimens"; Edward H. Risley, Waterville, Maine, "Craniocerebral Injuries from the Viewpoint of the General Surgeon"; George M. Sabin, Burlington, Vt., "Fractured Spines"; William J. Mixter, Boston, "Acute Intraspinal Epidural Abscess"; Fred B. Lund, Boston, "Colitis Resulting in Obliteration of the Lumen of the Intestine"; Ernest M. Daland, Boston, "Plastic Restoration of the Lower Lip," and Dr. Lahey, "Resection of the Right Colon and Anastomosis of the Ileum to the Transverse Colon by the Mikulicz Plan." Dr. Alfred M. Rowley, Hartford, Conn., the retiring president, spoke on prominent physicians of Connecticut during the colonial period.

MARYLAND

Personal.—Dr. Allen F. Voshell, associate professor of orthopedic surgery, University of Virginia Department of Medicine, Charlottesville, Va., has been selected to head the department of orthopedic surgery at the University of Maryland School of Medicine and College of Physicians and Surgeons.——Dr. Daniel B. Sprecher, Sykesville, was given a testimonial dinner, September 10, by the Carroll County Medical Society in celebration of his completion of fifty years in the practice of medicine.

MINNESOTA

Suspended Sentence Revoked.—E. F. C. Ebeling, Minneapolis, was committed to the city workhouse for a period of one year, September 8, by Judge Mathias Baldwin of the district court. Ebeling entered pleas of guilty, June 10, to violating the basic science law and the statute against distributing circulars and pamphlets on rejuvenation and various ailments. He paid a $100 fine in June for violating the basic science law and received a suspended sentence of one year in the workhouse for distributing the pamphlets. August 23, Ebeling inserted an advertisement in a local newspaper informing the public that he had the "new and right way to help Rheumatism, Stomach, Bronchial Asthma, Hay Fever, etc." He was arrested the next day and committed to the workhouse as a second offender, the suspended sentence being revoked (THE JOURNAL, June 27, p. 2218).

MISSOURI

Clinics for Crippled Children.—Six clinics for the examination of crippled children were held during September by the State Service for Crippled Children of the State University of Missouri School of Medicine at Columbia to determine whether operations at the University Hospitals at Columbia could effect a cure or reduce the amount of deformity. Dr. George Kenneth Coonse, professor of orthopedics, in charge of the state service, conducted the clinics, which were held in Lamar, Nevada, Butler, Osceola, Warsaw and Trenton.——Dr. Jabez N. Jackson, Kansas City, addressed the St. Louis County Medical Society in Clayton, September 9, on "Physiological Considerations in Abdominal Surgery."——The physicians won the third golf tournament between the Doctors' Golf Club and the Dentists' Golf Club, St. Louis, September 9, at the North Hills Country Club.

Prizes Offered.—In commemoration of the fiftieth anniversary of the inauguration of Credé's method for the prevention of ophthalmia neonatorum, the Robert Johnston prizes for the years 1930 and 1931 have been consolidated and will be awarded for the best theses on "The Methods for the Prevention of Ophthalmia Neonatorum and Their Practical Value." The event will be celebrated at a joint meeting of the St. Louis Medical Society and the ophthalmic section of the society, October 20. The contest is open to the medical students of the Washington University School of Medicine and the St. Louis University School of Medicine. The winning essayist will receive $40 in gold, the author of the second best thesis, $20, and of the third, $10. Dr. John O. McReynolds, Dallas, Texas, chairman of the judges, will present the prizes and open a discussion on ophthalmia neonatorum, in which the

participants will be Dr. James S. Stewart, secretary, state board of health; Dr. Max C. Starkloff, health commissioner of St. Louis; an ophthalmologist, and representatives of the Commission for the Blind.

NEBRASKA

Society News.—Drs. Palmer Findley and Max Emmert, Omaha, addressed the Madison Five Counties Medical Society, Norfolk, recently, on the teaching of obstetrics and on gallbladder diseases, respectively.——Drs. Alfred Schalek, Omaha, and John D. Lutton, Laurel, discussed syphilis from the standpoints of the skin specialist and the general practitioner, respectively, before the Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society, Winnebago, August 7.——The Omaha-Douglas County Medical Society will hold two sessions jointly with the American Congress of Physical Therapy, October 6-7. Dr. Gustav Kolischer, Chicago, will speak, October 6, on "The Place of Diathermy in the Cancer Problem" and Drs. Grandison D. Royston, Frank H. Ewerhardt and Melvin A. Roblee, St. Louis, on "Application of Heat Therapy in Pelvic Infections." Dr. Robert A. Cooke, New York, will speak, October 7, on allergy.

NEW HAMPSHIRE

Grafton County Meeting with Dartmouth Medical School.—The Grafton County Medical Society will hold an all-day meeting in cooperation with Dartmouth Medical School, Hanover, October 9. Guest speakers will be Drs. Edward Starr Judd, Rochester, Minn., President, American Medical Association, on "Treatment of Biliary Disease"; Earl D. Osborne, Buffalo, "Syphilis in General Medicine"; Channing Frothingham, Boston, "Treatment of Edema"; Halsey B. Loder, Boston, "Early Treatment of the Severely Injured"; Clarence H. Beecher, Burlington, Vt., "Clinical Use of Purgatives." The following members of the staff at Dartmouth will also give addresses: Drs. Ralph E. Miller, on "Pathological Physiology of Edema"; Harry T. J. French, "Clinical Considerations of Edema"; Clarence J. Campbell, "Pharmacology of Purgatives" and John F. Gile, "Diseases of the Gallbladder." Dr. George C. Wilkins, Manchester, president, New Hampshire Medical Society, will make the opening address.

NEW YORK

Progress in Venereal Disease Control.—There are now about sixty organized clinics in upstate New York established for the treatment of indigent venereal disease patients. In many rural counties, however, it has been found more practical to pay practicing physicians a nominal fee for the treatment of indigents. This work is included in a program of venereal disease control which is the result of an agreement entered into in January by the Medical Society of the State of New York and the state health department with a view to formulating an arrangement with the medical profession for the control in the first place of syphilis and later of gonococcal infections. Through information obtained in two surveys of the state that have been made by the division of social hygiene at three year intervals, it was ascertained that patients with syphilis are most frequently diagnosed late in the course of the disease and do not receive enough treatment for a cure or to prevent possible relapses to an infectious condition. Dr. James N. Vander Veer, formerly president of the state medical society, was appointed as liaison officer with Dr. Albert Pfeiffer, director of the division of social hygiene. These physicians have addressed seventeen county medical societies during the year, presenting the subject from the point of view of the medical profession and the state health department. Recent legislation passed in the state requires local health departments to provide for the treatment of patients unable to pay private practitioners, irrespective of the stage of the disease. To secure earlier diagnosis of nonhealing and suspicious lesions, an outfit containing three capillary tubes and a small vial of resinous wax has been prepared to obtain serous fluid from the lesions, and is available in all district supply stations throughout the state. This service has been well received by physicians, it was stated, not only in rural districts but in cities, as it allows physicians to make examinations in their own offices. A free consultation service is offered to physicians by mail or personal visit for diagnosis and to outline treatment.

New York City

Hospital News.—Dr. Edward W. Archibald, professor of surgery, McGill University Faculty of Medicine, Montreal, gave a lecture on surgical treatment of pulmonary tuberculosis at the Post-Graduate Hospital, September 15.

Lectures on Mental Hygiene.—A course of fifteen lectures on mental hygiene will be given at the Medical Center in Forest Hills, beginning October 21, under the auspices of the Medical Society of the County of Queens, the Queensboro Council of Social Agencies, the New York City Committee on Mental Hygiene and the mental hygiene section of the Welfare Council. The lectures will deal with behavior problems of children, problems of adolescence and delinquency and the mental hygiene of adult adjustment. Among the speakers will be Drs. George K. Pratt, Lawson G. Lowrey, Bernard Glueck, all of New York, and Bruce B. Robinson, Newark, N. J.

Dormitory for Columbia Medical Students.—Bard Hall, a $2,500,000 men's residence hall given to the Medical Center of Columbia University by Edward S. Harkness, was to receive its first students, October 1. The building was named in honor of Dr. Samuel Bard, for forty years connected with King's College, later Columbia, as its first professor of medicine, trustee and dean of the medical faculty. The dormitory is on Haven Avenue just above Riverside Drive, near One Hundred and Sixty-Eighth Street. It rises eleven stories on the Haven Avenue side, with three additional stories below that level on the west side sloping toward the Hudson River. It contains 235 rooms for students and ten suites for instructors. The two lower floors on the west side contain a gymnasium, swimming pool, squash courts and locker rooms, while the dining rooms are in the story just below the entrance floor, which opens on Haven Avenue. Living quarters occupy the third to the tenth floors inclusive. The illustration shows the building as seen from Riverside Drive.

OREGON

Society News.—Dr. Walter Clark, New York, spoke on "Medical Measures in Social Hygiene" before a recent meeting of the Portland City and County Medical Society and the Oregon Social Hygiene Society in Portland.——At the annual meeting of the Eastern Oregon Medical Society, Wallowa Lake, August 1, addresses were made by the following physicians, among others: Drs. Richard B. Dillehunt, Portland, "Elbow Fractures in Children"; Robert C. Coffey, Portland, "Diagnosis and Treatment of Painful Abdominal Conditions Other Than Organic Disease"; James Tate Mason, Seattle, "Problems of Cholecystitis," and John Earl Else, Portland, "Treatment of Tic Douloureux with the Injection of Alcohol."——Medical societies were organized during the past summer in Yamhill, Washington and Columbia counties.

PENNSYLVANIA

Dedication of the Falk Clinic.—The Falk Clinic of the University of Pittsburgh was dedicated, September 28. Addresses were given by Drs. Raleigh R. Huggins, dean of the University of Pittsburgh School of Medicine, and Joseph H. Barach, director of the clinic. In the evening a dinner was given by the school of medicine to the board of directors of the Allegheny County Medical Society, with Drs. Willard J. Stone, Pasadena, Calif., and Alfred Stengel, Philadelphia, as guests of honor. At a meeting of the society and other

organizations later in the evening. Dr. Huggins spoke on "The Medical Center and Its Aims"; Dr. Stone, "Certain Economic Phases of Medical Practice"; Dr. Stengel, "The Clinic and Medical Development," and Dr. Barach, "Aims of the Falk Clinic." The Falk Clinic is one of the group of buildings to be known as the Pittsburgh Medical Center. It was erected at a cost of about $1,000,000, contributed by Messrs. Leon and Maurice Falk, and provides modern equipment for the diagnosis and treatment of ambulatory patients and for teaching. On the first floor are the children's department, the dental and pharmacy departments, and the board and staff rooms; on the second floor are the departments for the treatment of diseases of the nervous system, heart and kidneys, the diet kitchen, a special roentgen department, and demonstration and lecture space; the third floor contains the department for the treatment of crippled children, the women's department, and the general surgical division, where minor operations will be performed. A large public lecture hall is provided on the fourth floor.

Philadelphia

Personal.—Dr. Edward A. Strecker, formerly professor of nervous and mental diseases at Jefferson Medical College, has been appointed professor of psychiatry at the University of Pennsylvania School of Medicine.——Dr. Joseph B. Wolffe, associate professor of cardiovascular diseases, Temple University School of Medicine, was the guest of honor at a testimonial dinner, September 1, given by members of the staff of his clinic.

Faculty Changes at Jefferson.—Additions to the faculty of Jefferson Medical College include George Russell Bancroft, Ph.D., as professor of physiologic chemistry and toxicology; Lorenz P. Hansen, Ph.D., assistant professor of physiologic chemistry, and Major Francis E. Weatherby, professor of military science and tactics. The following recent promotions were also announced at the beginning of the 1931 session:

Dr. George A. Ulrich, clinical professor of obstetrics.
Dr. Michael A. Burns, associate professor of nervous and mental diseases.
Dr. Arthur J. Davidson, associate professor of orthopedic surgery.
Dr. Harry Hunter Lott, assistant professor of laryngology.
Dr. Alexander Spencer Kaufman, assistant professor of otology.
Dr. Benjamin P. Weiss, assistant professor of nervous and mental diseases.
Dr. James R. Martin, assistant professor of orthopedic surgery.
Dr. B. B. Vincent Lyon, assistant professor of medicine.
Dr. Collin Foulkrod, assistant professor of obstetrics.

TENNESSEE

Professor of Biochemistry Appointed.—Charles S. Robinson, Ph.D., director of the chemical division of the Michigan Experimental Station, East Lansing, has been appointed professor of biochemistry at the Vanderbilt University School of Medicine, Nashville. He succeeds Glenn E. Cullen, Ph.D., who resigned, September 1, to become director of laboratories at the Institute of Pediatric Research of the University of Cincinnati Medical School. Professor Robinson is a graduate of the University of Michigan and has held various teaching and research positions at his alma mater. During the World War he was assigned to the Rockefeller Institute to take charge of the training of chemists for base hospital laboratories.

Society News.—Dr. Tinsley Harrison addressed the Nashville Academy of Medicine, September 22, on "Indications and Contraindications for Digitalis."——At a joint meeting of the Anderson and Campbell county medical societies, August 27, in Jellico, Dr. Joe M. Cox, Coal Creek, spoke on "The Value of a Physician's Reputation," and Dr. Horace T. Fortner, Jellico, "Complications of Pregnancy and Their Treatment."——The Bedford County Medical Society was addressed at its August meeting by Dr. Vernon K. Earthman, Shelbyville, on conjunctivitis.——Dr. Richard M. Little, Martin, among others, spoke on "Cardiac Arrhythmias" before the Tri-County Medical Society (Benton, Carroll, Henry, Weakley counties), August 11, at McKenzie.——Among others, Dr. Ernest H. Baird, Dyersburg, addressed the Dyer, Lake and Crockett County Medical Society, September 2, on "Abscess of the Liver."

TEXAS

Faculty Changes at University of Texas.—New appointments at the University of Texas School of Medicine include: Dr. Ellen D. Furey, adjunct professor of pathology, succeeding Dr. Harry L. Klotz; John F. Pilcher, instructor in pathology; Wilbur A. Senglemann, Ph.G., instructor in anatomy, and Dr. William W. Bondurant, Jr., instructor of clinical medicine. The appointment of Dr. George R. Herrmann, formerly of New Orleans, as associate professor of medicine was announced in THE JOURNAL, July 25, p. 254.

GENERAL

International Hospital Association.—At the second International Hospital Congress, which was held in Vienna in June, the International Hospital Association was organized. Two classes of members are admitted, one including persons connected in various ways with hospitals and another including representatives of firms or organizations standing in business relationship to hospitals. Ten permanent committees were established to work out standards for the guidance of the hospital field throughout the world. Dr. René Sand, Paris, is president and E. H. Lewinski-Corwin, Ph.D., New York, is secretary general of the association.

Four Weeks of Automobile Fatalities.—The U. S. Department of Commerce announces that, during the four weeks ended September 5, eighty-two large cities in the United States reported 656 deaths from automobile accidents, as compared with 674 deaths during the four weeks ended Sept. 6, 1930. Most of these deaths were the result of accidents which occurred within the corporate limits of the city, although some accidents occurred outside the city limits. For the fifty-two week periods ended Sept. 5, 1931, and Sept. 6, 1930, the totals for the eighty-two cities were, respectively, 9,098 and 8,841, which indicate a recent rate of 25.6 per hundred thousand of population as against an earlier rate of 25.3.

Society News.—Dr. Burt R. Shurly, Detroit, was chosen president-elect of the American Academy of Ophthalmology and Otolaryngology at its recent meeting at French Lick, Ind. Dr. Samuel Hanford McKee, Montreal, became president and Dr. Gordon B. New, Rochester, Minn., was elected vice president.——Dr. Max C. Starkloff, St. Louis, was elected president of the International Society of Medical Health Officers, September 16, in Montreal, and Dr. Francis E. Harrington, Minneapolis, secretary-treasurer.——Dr. Walter T. Dannreuther, New York, was elected president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons at its recent annual meeting in White Sulphur Springs, W. Va.; Drs. Andre Crotti, Columbus, Ohio, and Herbert M. Little, Montreal, were elected vice presidents, and Dr. Magnus A. Tate, Cincinnati, was reelected secretary. The next annual meeting will be held at French Lick Springs, Ind., Sept. 12-14, 1932.——At the annual meeting of the American Psychopathological Association, Dr. James Ramsay Hunt, New York, was elected president, and L. Eugene Emerson, Boston, secretary.——A group of research workers in medicine and biology, meeting in New Haven, Conn., organized the Biological Photographic Association, September 12, for the purpose of advancing the use of photographs and motion pictures in the biologic sciences. Ralph P. Creer, photographer, division of photography, Yale University School of Medicine, is the first president.

Health During the Business Depression.—Mortality statistics for the first five months of 1931 indicate that the death rate was somewhat lower than the rate for the corresponding period of 1928, a period of full employment, according to a report sent by Surgeon General Hugh S. Cumming of the U. S. Public Health Service to President Hoover in response to a request for information concerning health conditions during the financial depression. A compilation of reports from thirteen states with a total population of 43 million shows a rate of 12 per thousand as compared with 13.7 for the corresponding period of 1928. Records collected by the division of vital statistics of the bureau of the census, from industrial insurance companies having an aggregate of more than 70 million policyholders, show a death rate among these policyholders of 10.5 per thousand for the first six months of 1931, compared with 10.6 in 1928. Sickness rates among a group of wage earning members of sick benefit associations which report regularly to the public health service were also quoted by Dr. Cumming as indicative of improvement in health conditions, 104.2 in 1931 as compared with 117.9 in 1928. Diphtheria incidence as reported by state health officers was 26,000 cases for the first six months of this year as compared with 46,000 for the same period in 1928; smallpox, 24,000 in 1931 and 29,000 in 1928, and typhoid, 4,500 in 1931 and 5,900 in 1928. Reports of pellagra from seven states in which this disease is prevalent showed 14,333 cases for the present year, compared with 11,592 in 1928.

CORRECTION

Chronic Myelogenous Leukemia.—In the paper by Drs. Hoffman and Craver (THE JOURNAL, September 19, in the third line of the second column on page 838) in the technic of the roentgen treatment, the distance is given as 15 centimeters; it should have been 15 inches, or 37.5 centimeters, the factors employed being: voltage, from 135 to 140 kilovolts; distance, 37.5 cm.; filtration, 5 mm. of aluminum; current, 5 milliamperes.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 5, 1931.

Campaign Against the Tsetse Fly

The tsetse fly, of which one species (Glossina palpalis) conveys trypanosomiasis to man and another (Glossina morsitans) nagana to cattle and horses, furnishes a serious problem in hygiene in parts of Africa. In Uganda the natives cannot keep stock where Glossina morsitans exists and therefore a vigorous campaign is being carried on against it. Attempts are being made to open to stock the unlimited water supply of the river Kagera and the lakes and encourage the natives to return to these places, which are now useless. In recent times the country carried a large stock of cattle; now hardly a beast is to be seen. It has become evident that there is some unknown factor which attracts flies to certain areas, and a study of the vegetation is being made to discover this. Favorable conditions are water and shade. By burning down of the bush in certain areas, thus destroying the home of the flies, it is hoped to free much larger adjacent areas. Trained native boys are always out catching the flies and digging up the pupae. The fly has special breeding places, usually in soft dry earth under logs, bushes and sides of anthills. The larvae, which measure about one-fourth inch, burrow into the ground for a few inches and there pupate after four or five hours. The period of pupation is about a month. The female fly is generally regarded as the more rapacious and attacks animals fiercely. Some authorities say that she requires the blood of one of the large mammals before reproduction can take place. The life of the adult fly is from two to four months. Pedestrians, cyclists and motorists all attract the fly and disseminate it. In an endeavor to prevent this, a system of smoke houses has been devised by Mr. W. F. Poulton, director of veterinary services, Uganda. Every car passing from a fly area to a free area passes through a smoke house for fumigation. As many as 200 flies have been seen on and in a car entering a smoke house. When the car emerges they have all gone.

The Lack of Officers for the Army Medical Corps

In spite of the great reduction of the army which has been going on since the war, the officers of the medical corps are 200 short of the authorized establishment. This is partly counteracted by reemploying officers of the reserve, granting temporary commissions and employing civilian physicians, but these cannot be sent abroad. The result is that the regular officers are compelled to serve long periods abroad without the compensating advantage of sufficient time on home service. This adds to the unpopularity of the service. In a joint letter to the *Times*, Sir Alfred Keogh, late director general of the army medical corps, and other retired high officers point out that it is not difficult to fill the purely medical and surgical posts from the civil medical profession, but administrative posts, the command of medical units, and the many other appointments of a similar nature require prolonged training if they are to be filled adequately in peace or in war. This training involves an intimate knowledge of the medical service and the medical and sanitary requirements of the army as a whole, as well as a thorough knowledge of the characteristics of each branch. There are many instances in the past of a similar shortage arising from similar causes, but never has the position been more serious than at present. The cause is, as it has always been, that newly qualified physicians are not attracted to the service, as the pay and pensions have fallen behind the times in actual value and compare unfavorably with other public appointments and the emoluments and amenities of private practice available to men of the type and ability suitable for the corps. Such young men, whose medical education has cost from $7,500 to $10,000, will consider entering the corps only provided the initial pay is as good as that of other public appointments open to them and if the larger emoluments of civil practice are compensated for by the certainty of a pension absolutely and relatively commensurate with what they renounce by embarking on an army career. Therefore the only remedy is an immediate increase of pay and pension, and improvements in the status of all ranks of officers of the corps.

The Government and Birth Control

A memorandum on contraceptive methods addressed to maternity and child welfare centers by the minister of health has been summarized in a previous letter (THE JOURNAL, May 16, p. 1710). Finding that misconception has arisen in regard to the views therein expressed, the minister has defined the government position in another memorandum. He emphasizes the point that local authorities have no general power to establish birth control clinics as such. Their powers, so far as women are concerned, are limited to making arrangements for attending to the health of expectant and nursing mothers. If an authority decides to provide facilities for giving birth control advice at a maternity and child welfare center, their use must be strictly incidental to the purpose for which the clinic was established—the treatment of sick persons. Only women who need medical advice and treatment for gynecologic conditions can properly be admitted to the clinic, and contraceptive advice can properly be given only to married women in attendance at the clinic in whom pregnancy would be detrimental to health. It is obviously desirable for a local authority to obtain the services of an officer especially experienced in the clinical advice and treatment needed at a gynecologic center of this sort. The minister does not consider it desirable that a gynecologic clinic should be established at a maternity and child welfare center, if an authority is satisfied that there is need for such a clinic, it should be provided in separate premises or at a hospital. Expectant and nursing mothers in attendance at such centers who are found to be in need of medical advice and treatment for gynecologic conditions could then be referred to the clinic. The minister considers that no officer of a local authority should be prejudiced in any way by a decision of the authority to provide facilities for birth control advice within the limits laid down by the memorandum. This work should not be regarded as falling within the scope of the normal duties of the medical officers, who should be free to undertake it or decline it.

Improvement in the Health of London School Children

The health officer for London, Dr. F. N. Kay Menzies, states in his annual report on the school medical service that the health and physique of the London school child are infinitely better than those of his parents; almost every year some improvement is shown in the figures relating to personal hygiene and the nutritional index. The number of children medically inspected last year was 304,620. In addition, 186,615 children under observation for previously recorded defect were inspected. Thus the children inspected formed a high percentage of those on the school rolls. Every child in attendance was also inspected three times annually by the school nurse. The interest shown by parents in the medical inspection of their children was gratifying. Because it has reached the whole population, there is probably no other influence which can be compared with it in its educational effect on the people, from the point of view of health, with the intimate talk with the school physician, the child being present as an object more absorbingly interesting to the mother than any other could possibly be. Refusal of parents to submit children for medical inspection was so rare as to be almost negligible. The most striking figures exemplifying the effect of the school medical service generally are those relating to personal cleanliness. The improvement in this respect is an index of all-round general improvement in personal hygiene and care. The heaviest burden of the school medical service is due to the poor condition of the children's teeth. "It

is probably not going too far to say that dental unsoundness is the most serious of all the conditions that not only menace but actually lower the state of the national health." The condition of the teeth of the infant entrants continues to give cause for great concern. In 1930, of the entrant infant boys, 47 per cent showed obvious dental decay, and of the entrant infant girls, 47.8 per cent. It is barely possible now for a child to be found in school at a routine inspection suffering from tuberculosis. During the year only sixty-two children were notified with pulmonary tuberculosis and forty-seven with tuberculosis in other parts. These numbers are lower than those of the previous year, which already was far below 1 in 1,000. In 1930 it may be claimed that the physical state and comfort of the children of London are better than ever before as judged on the broad primary conditions of nutrition and personal hygiene. Although minor conditions of departure from health are rife, the major conditions of disease are becoming rarer and rarer. The stringency of the times is not allowed even to a slight degree to affect the children prejudicially, but, on the contrary, their health steadily improves.

Martin Flack, a Pioneer in Aeronautical Medical Research

Group Captain Martin Flack, director of the department of research of the air ministry, who attained fame in the "Keith-Flack node," has died in his fiftieth year from septicemia. He graduated in arts at Oxford in 1905 and then studied medicine at the London Hospital. His abilities were recognized by Sir Leonard Hill, then lecturer on physiology, who appointed him demonstrator and whom he assisted in research on the respiration and circulation, and by Sir Arthur Keith, then lecturer on anatomy. When in 1905 Keith was investigating the arrangement of the musculature round the venous orifice of the auricular chamber, he was joined by Flack. In the following year Tawara published the discovery of his node in the mammalian heart, and Keith and Flack verified this and set out to trace the evolution of the connecting system between auricles and ventricles from the simpler arrangement in the lower vertebrates and to ascertain whether in the region where the heart beat began there existed tissue in the nature of Tawara's node at the beginning of the auriculoventricular bundle. They found in all mammalian hearts a collection of peculiar muscular tissue, which they named the sino-auricular node and which they inferred originated the heart beat. In 1910 Flack worked in Professor Kronecker's laboratory in Berne and performed experiments supporting this view, which was later confirmed by Lewis. He wrote the article on the heart for Hill's "Further Advances in Physiology" and, with this physiologist, "A Textbook of Physiology." In conjunction with Sir Leonard Hill he showed, among other things, that filling the lungs with oxygen enabled an athlete to run with astonishing ease and pace, with no after-feeling of stiffness or fatigue. He was appointed director of medical research of the air ministry, where he made pioneer investigations on the causes of breakdown, in body and mind, of experienced fliers and on how to detect candidates for the air force who were constitutionally unfit. He devised a series of tests which are now employed and wrote several important articles on medical problems of aviation, a subject on which he is a recognized authority all over the world.

Casualties of the War

In the last volume of the "Official History of the War," which has recently been published, more than 11 million casualties are recorded. Exclusive of dominion and other overseas forces, 2,414,000 persons, or 40 per cent of those who served, suffered to the extent of death or disablement for which compensation was given. The expansion of the medical corps was without parallel. Before the outbreak it numbered only 1,279 officers and 3,811 of other ranks. In August, 1918, it numbered 10,178 officers and 100,176 of other ranks, exclusive of territorial forces. The number of hospital beds equipped and maintained was 637,746. Of the sick and wounded admitted to medical units, 3.04 per cent died, 58.10 returned to duty, and 37.41 were evacuated overseas. In France, during 1917 and 1918, 1,140,398 wounded were admitted to casualty clearing stations. Of these, 30 per cent required immediate operation. Fifty-five per cent of the total deaths occurred in the casualty clearing stations, showing that high medical and surgical skill should be available in them. There were two casualties due to disease to every one due to wounds inflicted by the enemy.

The Rebuilding for Lewis

Messrs. H. K. Lewis & Co., medical publishers and booksellers, have rebuilt their premises. The building provides free reading rooms and a reference library for use by medical students and practitioners, also a lending library for students. The event was marked by a reception. Sir Gregory Foster, formerly vice chancellor of the University of London and provost of University College, Gower Street, for twenty-five years (he retired in December, 1929) presided over an informal meeting and gave an interesting account of the origin of the scheme and the negotiations with University College which had resulted in the present building. His recollections went back to 1881. He congratulated University College on having such an institution at its doors. Dr. H. R. Kenwood, formerly Chadwick professor of hygiene in the University of London, gave an interesting address on textbooks and education. The president of the company, Mr. H. L. Jackson, returned thanks to those present on such a memorable occasion. Mr. Percy Fleming, F.R.C.S., late ophthalmic surgeon to University College Hospital, spoke from the audience and said that as a boy at University College School he first bought books at Lewis's in 1873, and as a student made constant use of the company's invaluable medical circulating library.

PARIS

(From Our Regular Correspondent)

Aug. 19, 1931.

Medical Aid in the French Colonies

In connection with the colonial exposition being held at Paris, Dr. Lasnet, inspector general of the public health service for the colonies, published a report on the hygienic work carried on by France in the colonies. One may distinguish in the development of medical aid for the colonies three periods corresponding to (1) the military occupation, (2) the administrative organization, and (3) the economic organization. During the military occupation, the physicians attached to the expeditionary forces render aid to the soldiers, and at the same time they treat the natives. Gradually, in the vicinity of the posts that they serve, the reputation of the physicians becomes established. Sometimes the native chiefs, dissatisfied with their medicine men, appeal to the white physicians, and the cures thus effected often accomplish much more by way of pacification than successes at arms. Thus, Colonel Lyautey, who was sent in 1898 to suppress an insurrection in Madagascar, wrote to General Gallieni as follows: "Send me some physicians and I will return to you several companies of troops." In a similar manner, the colonial physician Liotard made a peaceful conquest, thirty-five years ago, without a single soldier, of the people of the Ubangi-Shari region in Africa, of which he became, a few years later, the governor. French colonial physicians have acquired, in nearly all the colonies, a prestige that has assured to France the attachment and gratitude of entire peoples. During the period of administrative organization, medical aid was extended gradually to the areas that had been pacified. The consultation rooms of the army posts soon outgrew their usefulness, and it became necessary to create hospital services in the larger centers of population. For the rural population, centers served by mobile medical personnel was the most feasible plan, although in the more grave cases the rural physicians visited the patients in their

homes. In Morocco, Marshal Lyautey made use of such sanitary crews traveling on horseback, camels or donkeys, and they facilitated enormously his work of opening up the country. Their work is usually rapidly successful, since patients abound. To relieve the hospitals, dispensaries were created in large numbers. Soon the physicians were overwhelmed with patients, and to aid them the more competent of the native men nurses were employed. Finally, medical schools were created to train native practitioners to treat the more common diseases and to apply measures of preventive medicine and hygiene. France has three large medical schools in its colonies: the school at Tananarivo (the capital of Madagascar), founded by General Gallieni in 1897; the school at Hanoi (the capital of French Indo-China), created by Governor General Doumer in 1900, and the school at Dakar (the capital of French West Africa), created by Governor General Merlin in 1921. A much smaller school at Pondicherry (capital of French Establishments in India) is the oldest, having been founded in 1827 by physicians of the navy. During the period of economic organization, it is necessary to lay out roads, build bridges and railway systems, and organize cities, towns and villages. The next thing is to increase production. A high percentage of the population is undernourished, and the contemplative life that the people have always led has not prepared them for the hard work that is now necessary. The result is a high mortality from malaria, recurrent fever, trypanosomiasis, leprosy and other disease. From 40 to 75 per cent of the new-born die during the first eighteen months, mostly through the ignorance of the mothers. The essential creations for the promotion of medical aid become thus the dispensary and the maternity. The present trend consists, therefore, in limiting the number of hospitals, which cost large sums and which immobilize the medical personnel, and in increasing the number of dispensaries and facilitating the mobility of the physicians. The medical institutions in the French colonies include at present 126 hospitals, 44 ambulances, 265 dispensaries, 468 maternities, 628 infirmaries, 5 psychopathic hospitals, 96 leprosariums and 34 "hypnosariums." The European medical personnel supports and aids in every possible way the native personnel, which constitutes the majority of the practitioners. The European personnel directs, guides and coordinates the efforts of the native physicians. European physicians in the French colonies at present number 780. The colonial administration is endeavoring to increase this number to 1,500. The native sanitary personnel comprises 678 native physicians, 42 pharmacists, 837 midwives, 4,910 attending male nurses, and 495 so-called hygienic male nurses. The annual appropriations for the colonial public health services have steadily increased from $2,000,000 in 1920 to $8,480,000 in 1930.

Deaths

Dr. Lortat-Jacob, chief physician of the Hôpital St. Louis, in Paris, and an eminent dermatologist, has died at the age of 58. He first became known on the appearance of his thesis on iodine and the means of defense of the organism; but he had published also some excellent articles on sciatica and on medullary syphilis. His reputation, however, was based chiefly on studies on the action of freezing on the tissues. He was the first to introduce cryotherapy in France, applying it to the treatment of warts and moles. He invented for this purpose an apparatus for the extemporaneous production of small ampules of carbon dioxide snow, for immediate use.

Dr. Jacquemaire-Clémenceau, the grandson of Clémenceau, has succumbed, at the age of 36, to a streptococcal septicemia, which resulted from a finger prick inflicted two months previously while he was operating on a patient in a hospital school of a Red Cross society in Paris. The decedent enlisted as a private during the World War, being at that time a medical student, and was severely wounded almost in sight of his illustrious grandfather. His scientific articles based on laboratory studies and clinical applications with reference to cultures of d'Herelle's bacteriophage gave promise of a scholar of note. The minister of public health brought him the cross of the Legion of Honor as he lay on his death bed, the victim of professional duty.

JAPAN

(From Our Regular Correspondent)

Aug. 15, 1931.

Physical Development of Japanese Children Born in America

Six years ago, Dr. Yoshida published the results of the physical examination made of about 2,300 children who had been born and brought up in Hawaii by Japanese parents. The average height of the children aged from 6 to 16 years was more by 3.6 per cent in boys and by 5.5 per cent in girls than that of the children of the same age in Japan, and their average weight was more by 12.7 per cent in boys and by 9.9 per cent in girls. Dr. F. Ishiwara, however, thought that this might have been due to the superiority of the climate and food in Hawaii, and so while in America lately he studied with the aid of colleagues there the Japanese people from 19 to 27 years of age born in America and brought up by their own parents. The examination of those in school was done easily, but there were difficulties in making examinations of the young people who worked, as they had to be seen at their homes. Finally, 276 young men, 55 young women, and their 198 parents who were Japanese in nationality—308 in Los Angeles, 180 in Hawaii and 41 in Seattle, were examined. The average height of the 276 young men was 166.3 cm.; those of Los Angeles were the tallest (169.5 cm.), and those of Hawaii measured 164.9 cm. In comparison with the average height, 160.4 cm. of 3,700 men of conscript age in the Yamanote ward of Tokyo, the average height of the 276 is about 6 cm. greater and that of the Japanese in Los Angeles about 9 cm. The average height of the 55 young women was 155.9 cm., 6.7 cm. more than the 149.2 cm. of the women in Japan, and the difference is about the same as that of the young men. The average height of the 99 fathers in Los Angeles was 159.9 cm., which is 2.4 cm. more than that of the people of the same age in Japan, and that of the 99 mothers was 154.6 cm., which is 7.4 cm. more than the 147.2 cm. of the women in Japan. Dr. Ishiwara ascribes the superior height of the young men and women in Los Angeles to the superiority of their parents in constitution, the good climate and food, and an understanding on the part of the young people of the laws of health.

Society News

A new society, organized under the name of the Psychic Hygienic Society, held its first meeting, June 13, in the headquarters building of the Japan Red Cross at Shiba Park, Tokyo, under the chairmanship of Dr. Miyake. Lectures were given by Dr. Masaki on criminology and science and by Dr. Uyematsu on the movement of psychiatric hygiene.

Government Plans an Antituberculosis Campaign

Mr. Adachi, home minister of Japan, who has laid plans to eradicate leprosy from this country, is now attempting to stamp out tuberculosis. There are 300,000 cases of tuberculosis in Japan, and the tuberculosis deaths average over 123,000 a year. An investigation made on antituberculosis day, which was held April 27 this year, showed that there were 50,000 grave cases; about 10,000 of these persons were unable to obtain treatment because of their economic condition. There are only 2,300 beds for indigent patients. The minister considers it most urgent to improve the equipment of the sanatoriums. He therefore called an antituberculosis conference, August 3, at his official residence, and in attendance were delegates from the departments of education, communication, the army, the navy, law and railway, besides those from the Tokyo Imperial University, the branches of the Japan Red Cross Society hospital, and the antituberculosis societies. The following impor-

tant questions were discussed: 1. The prevention of infection in students by putting dormitories or boarding houses under the charge of physicians. 2. The physical examination of applicants at schools or for employment. 3. Regulation of doubtful drugs used in the treatment of tuberculosis.

Fiftieth Anniversary of Discovery of the Tubercle Bacillus

Under the auspices of the Kitasato Institute for Infectious Diseases, a celebration will be held in honor of the discovery by Robert Koch of the cause of tuberculosis, half a century ago. The celebration will be held March 25, 1932, in Tokyo.

An Epidemic of Dysentery

Owing to the continuous rainy days in July this year, an epidemic of dysentery was prevalent in Tokyo. The total number of cases from January to July 12 was 3,972, and in July an average number of new cases was 50 a day, about 40 of which were in children.

Memorial Meetings for the Late Dr. Kitasato

The Japan Physicians' Association, whose president was formerly Baron Dr. Kitasato, held a special meeting to elect his successor in the Kogyo Club in Tokyo, July 2. Prof. Dr. Kitajima, chief of the medical department of the Keio University and member of the Kitasato Institute for Infectious Diseases, was unanimously elected. In the afternoon the association held a memorial meeting in honor of Dr. Kitasato. The service was held according to the Shito rite with the chief of the Izumo Shinto sect, Baron Senge, officiating, attended by the son of the deceased, Mr. Adachi, minister of the home department, Dr. Kitajima and several hundred other members. After addresses by Mr. Adachi and others, Dr. Takagi, a follower of the deceased scholar, eulogized the departed scientist. Another service was held, July 17, in honor of Dr. Kitasato in the same club under the auspices of seventeen societies of which he had been president, director or councilor. Addresses were given by Viscount Dr. Ishiguro, Viscount Kiyoura, Mr. Kubota, Dr. Takagi and Dr. Hata. A photograph and a life history of the deceased were given to each of the 800 in attendance.

Robert Koch had been enshrined in the Kitasato Institute for Infectious Diseases by his grateful follower Kitasato, and a memorial service was held every year by him and the staff of the institute. Now the followers of Kitasato are going to enshrine him also as the founder of the institute and of bacteriology in this country.

Conference for Prevention of Loss of Sight

Under the auspices of the Central Social Work Society, a conference was held in the conference hall of the social bureau of the home department, Tokyo, July 19, with the view of preventing people from losing their sight. More than 170 delegates from every local district attended. It was decided to give an impetus to the work for preservation of sight, and a sight preservation day will be held October 10 yearly.

Personals

Dr. Shiga, president of the Keijo Imperial University in Keijo, Korea, is said to be going to resign his post and to enter the Kitasato Institute for Infectious Diseases in order to pursue his studies on the bacillus of leprosy. He was formerly a member of the institute and is the discoverer of the Shiga bacillus. Among the seven who will be sent to France as exchange scholars between France and Japan, three medical men who have been named are Dr. Oyama from the Tokyo Imperial University (hygiene and bacteriology), Dr. Tomioka from the Kyoto Imperial University (psychonosology), and Dr. Tachikawa from the Keio Medical College.

Dr. Sera has been appointed professor of forensic medicine in the Kumamoto Imperial University.

Dr. Morinaga, lecturer in the medical department of the Tokyo Imperial University, died of acute meningitis, June 1.

Dr. Yamakawa, professor in the Kanazawa Imperial Medical College, has been appointed professor of otorhinolaryngology at the Osaka Imperial University.

Dr. Kobayashi, professor in the Keijo Imperial University, has been appointed professor of otorhinolaryngology of the Nagoya Imperial Medical College.

The First Menstruation of Japanese School Girls

The staff of obstetrics and gynecology in the Kumamoto Imperial Medical College has published the results of an investigation on the first menses of school girls in fifty-nine schools. The shortest period between the first and the second menses was a month, and the longest was four years and five months; that of 92 per cent of them was from one to six months. The average intervening period was 5.8 months. The menses of most of the girls continue for five days; next come those of four days, and then those of three days, though the average duration among the women in this country is from four to seven days.

Maternity Hospital for the Poor in Tokyo

There are three free maternity homes for the poor in Tokyo, at Tsukiji, Fukagawa and Asakusa, the last of which the municipal authorities are going to enlarge. It is expected to be completed in December. The establishment will also serve as a consultation center for pregnant women, and for teaching them birth control when they are so poor that they should avoid pregnancy. The homes will also keep the babies for the poor for six months and the midwives will call on the pregnant women who are unable to be in the hospital.

Oriental Red Cross Conference Postponed

The third Oriental Red Cross Conference, which was to be held in the Philippines this year, has been suspended because the fifteenth International Red Cross Conference is to be held in Tokyo in 1934. Therefore, the next oriental conference will meet jointly with the fifteenth international conference instead of being held in the Philippines this year.

New Hospital of Osaka Imperial University

For the use of practitioners and students, the university has established a hospital at Minato-ku, in Osaka, which was opened last May. A new institute for the study of leprosy has also been established at the university. Dr. Satani, Professor of dermatology in the university, is the chief. A new building for the institute will be erected in the suburb of the city.

BERLIN

(From Our Regular Correspondent)

Aug. 17, 1931.

Congress on Tuberculosis

Concerning his tuberculous patient, the first question that the physician must propose to himself is whether, at a given time, the body needs rest or a stimulus that will whip it into action, more or less. Especially before the beginning of a course of treatment in a sanatorium, the following question must be asked: Should the patient be sent to a sanatorium with an even, temperate climate, or to one with a mildly, moderately or vigorously stimulative climate? In selecting a resort for members of the sick benefit societies or for the war injured, this distinction has been observed for many years. The patient himself, by reason of mistaken ideas, usually expresses a preference for centers with the most stimulative climate. In compliance with the proposal of Seiffert, member of the Kommission für Tuberkulose im Mittelstand, a regulation has been adopted to the effect that aid in securing such forms of treatment shall not be granted until this preliminary question has been settled.

In addition to climate, there are other forms of stimulation in the practice of the physician at home and at the sanatorium. Among these are singing exercises and many kinds of gym-

nastics. Their application was discussed by Dr. Wiese, chief physician of the Landeshut sanatorium in Silesia. He emphasized, however, that the advantages are to be expected only in cases of a certain favorable type and with careful adjustment of the exercises—otherwise more damage than benefit will result.

Increasing importance attaches to the surgical treatment of pulmonary tuberculosis, particularly its most frequent form: artificial pneumothorax. On this subject, papers were presented by Professor Zinn, Berlin, clinician at the Krankenhaus Moabit, and Dr. Schröder, *stadtmedizinalrat* of Oberhausen. Artificial pneumothorax was invented by Forlanini of Padua and was introduced in Germany, about twenty-five years ago, by Brauer of Hamburg. The successful results, ranging from 20 to 30 per cent in earlier years, have risen of late to 50 per cent or more. About 70 per cent of the patients become free from sputum and in from 10 to 15 per cent more of the patients, although the expectoration continues, the sputum contains no bacilli. This fact is important owing to the diminution of the danger of infective transmission. The number of persons with open tuberculosis in Germany may be placed at 175,000, 40,000 of whom would doubtless be amenable to treatment with artificial pneumothorax, as compared with 17,000 actually treated by the method. The length of treatment will range from one and one-half to two and one-half years; the injections of gas into the thoracic cavity must be repeated from thirty to forty times during the course of treatment. The stay in an institution will cover a period of from eight to twelve months. A patient will be able to resume his work in some cases at the end of a year; in other cases not before a year and a half. It is important that definite arrangements be made for protracted treatment, through agreements between sick benefit associations, provincial insurance institutes and the communal authorities.

From the experiences of the tuberculosis aid center in Neukölln, Dr. Zadek reported even more favorable results from the surgical treatment of pulmonary patients. They are important because of the comparatively early recovery of a working capacity. Whether or not infections are to be feared within the sanatoriums, and whether a patient with closed tuberculosis can be reinfected by a patient with open tuberculosis, is often discussed. Chief Physician Dr. Deist of Ueberruh spoke on the subject on the basis of the experiences in the sanatoriums, and Prof. Bruno Lange considered the problem from the point of view of experimental research. It appears certain that, unless proper care is exercised, healthy persons may become infected in sanatoriums; hence there are strict provisions in regard to the regular examinations of the personnel. But no observations have been made that point to the need of strict separation in sanatoriums of patients with closed and patients with open tuberculosis. The matter has a practical and also psychic importance; an immoderate fear of bacillus infection is not justified. But also Lange's experiments show that there is slight danger of infection. There is no tuberculosis without the tubercle bacillus, but it does not depend on the number of bacilli entering the organism. According to Lange, a so-called mass infection does not exist; a single bacillus may suffice to produce an infection. The infection depends first and last on the constitution of the individual, as to whether or not the bacillus produces disease or the body is able to wage a successful fight against disease. If after conquering the first manifestations of infection a person develops new manifestations, that is not so often the result of a new infection as of fluctuations in the power of resistance, such as may occur in the course of any one's life.

Roentgenography is important in the diagnosis of tuberculosis, provided it is skilfully applied. However, Redeker warns against exaggeration. If the new demands are to be satisfied, in many places not only new apparatus but also new power plants would have to be installed.

What roentgen diagnosis can accomplish was brought out in the address of Dr. Lochtkemper of Düsseldorf on pneumonoconiosis and tuberculosis due to pneumonoconiosis. Many kinds of dust to which workmen are exposed bring about changes in the lungs. Only the roentgenogram will reveal the peculiarities of silicosis, which, although fundamentally different from tuberculosis, may be associated with tuberculosis. Silicosis sometimes places the physician in a difficult position when called on to give an expert opinion from the standpoint of the occupational origin.

In the crusade against tuberculosis, in which it is highly important to discover persons capable of infecting others, series of examinations of persons living in contact with the tuberculous play a significant part.

It is always difficult to decide to what causes an increase or a retrogression of an endemic disease may be due; but that there has been a marked retrogression of tuberculosis may be seen from the report submitted by Dr. Helm, general secretary of the Deutsches Zentralkomitee zur Bekämpfung der Tuberkulose. As against a tuberculosis mortality of 12.4 per 10,000 of population in 1913, and of 20.4 in 1918, the last year of the war, in 1929 the mortality had dropped to 7.5. As the rate for 1928 was likewise 7.5, that may indicate a standstill. However, in the cities of more than 15,000 population, from which the preliminary figures for 1930 are available, a mortality of 7.8, as compared with 8.7 in 1929, was recorded. Favorable though these figures are, the majority of the deaths occur among the 20 to 40 age groups, the important years from the standpoint of the family and the economic life of the nation.

The Purchase and Distribution of Radioactive Substances

The federal commission for the control of cancer summoned experts recently to discuss the question of the purchase and distribution of radioactive substances such as radium and mesothorium. As a result, the Deutsches Zentralkomitee zur Erforschung und Bekämpfung der Krebskrankheit and the Reichsausschuss für Krebsbekämpfung agreed on certain criteria, which are set forth in a communication by Professor Friedrich: The purchase of radioactive substances should be considered only by such institutions as have an experienced radiologist for the therapeutic application of such substances. The use of small quantities of radioactive substance for the local treatment of carcinomas is the method indicated by the present status of medical knowledge, whereas the treatment *à distance* with heavy doses of several grams is a method concerning which no definitive opinion can be given as yet. Supplies of radioactive substances should be available in all university clinics and large hospitals, the amount ranging from 200 to 500 mg., according to the population of the area for which provision is made. Some centers should have an additional amount in order that they may serve also as research centers. Such central institutes should have an average of 50 mg. of radioactive substance for each bed designed solely for patients to be irradiated. A central institute should have not less than twenty beds set apart for the use of cancer patients to be irradiated with radioactive substances, which presupposes accordingly the possession of 1,000 mg. of radioactive substance. Since experience has shown that the biologic effects of the rays emanating from radium and mesothorium are of equal value, in the purchase of supplies the choice as between radium or mesothorium should depend exclusively on economic and practical considerations. The legal regulation of the application of radioactive substances for therapeutic purposes is a problem for the near future.

Visit of American Radiologists

A group of American radiologists visited recently the Universitätsfrauenklinik and the Roentgen Institute of the University of Erlangen. Professor Wintz, director of the clinic, delivered an address on the treatment of cancer.

Marriages

EDWARD GIPSTEIN, New London, Conn., to Miss Edith Hill Gruberg of Montgomery, Ala., in Philadelphia, August 9.

JOSEPH FRANCIS JENOVESE, St. Michael, Pa., to Miss Anne Dolores Corabillo of Hartford, Conn., July 25.

NEAL DOW CRAWFORD, South Pekin, Ill., to Miss Bernadine L. Potts of Deer Creek, September 1.

JOHN WILLIAM HARMON BEACH, Arlington, Ohio, to Mrs. Cora Mills of Findlay, July 23.

JAMES FARRA VAN METER, Lexington, Ky., to Miss Harriet Ann Drury of Fulton, Ill., June 27.

LLEWELLYN LEE ASHBURN, Norfolk, Va., to Miss Serena Dryden of Crisfield, Md., July 7.

SAMUEL H. EPSTEIN, Boston, to Miss Ethel Henin of Springfield, Mass., July 31.

CLYDE GRAY CULBERTSON to Miss Margaret O'Neal, both of Indianapolis, June 27.

MILTON TRAUTMANN, Brooklyn, to Miss Esther Trachte of Madison, Wis., July 1.

JOSEPH A. GRANETO to Miss Jennie Naomi Reinwald, both of St. Louis, June 10.

JACK AGINS, Detroit, to Miss Minna Maguite of New York, September 1.

COLVIN C. PERDUE, Mobile, Ala., to Miss Jessie Moore, April 27.

WILLIAM R. MEEKER, Mobile, Ala., to Miss Isabelle Cowan, June 9.

Deaths

John Blair Deaver ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1878, died September 25, aged 76, in Wyncote. Dr. Deaver was born near Buck, Lancaster County, Pa., and after education in the public schools was graduated from the University of Pennsylvania School of Medicine. He served for a year as resident physician at the Germantown Hospital and for a year with the Children's Hospital, after which he began private practice in Philadelphia, serving also as volunteer demonstrator in anatomy at the university medical school. In 1891 he succeeded Dr. Joseph Leidy as assistant professor of applied anatomy. In 1900 he resigned; then in 1914 he became professor of the practice of surgery and four years later John Rhea Barton Professor of Surgery and head of the surgical department. He was for many years chief surgeon of the German, now the Lankenau, Hospital. Dr. Deaver was an indefatigable worker. His contributions to medical literature were many, including a three-volume work on "Surgical Anatomy," a book on "Appendicitis: Its History, Pathology and Treatment," on "Diseases of the Breast," on "Enlargement of the Prostate," and on "Surgery of the Upper Abdomen," in which he had the cooperation of Dr. A. P. C. Ashhurst. His recognitions were many. He was secretary of the Section on Surgery and Anatomy of the American Medical Association in 1889-1890, a member of the American Surgical Association and president of the American College of Surgeons. When Dr. Deaver reached the retirement age in 1921, the limit was raised for two years successively in order that he might be permitted to continue his work. His death resulted from a severe secondary anemia for which he had undergone eight blood transfusions. He was a conspicuous figure in every medical gathering, especially distinguished by his wit, his dramatic method of expression and his scientific comments which were based on an enormous surgical experience.

Francis Joseph McCullough ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1905; member of the American College of Surgeons; demonstrator of obstetrics at his alma mater; served during the World War; aged 49; obstetrician to St. Vincent's Hospital for Women and Children and St. Joseph's Hospital; assistant obstetrician to the Jefferson Hospital; on the staff of the Misericordia Hospital, where he died, August 18, of peritonitis following a ruptured appendix.

Augustus Hartje Eggers ✠ Pittsburgh; Johns Hopkins University School of Medicine, Baltimore, 1900; served during the World War; formerly member of the city and state departments of health and county medical director; connected with the regional office of the U. S. Veterans' Bureau; aged 56; died, August 16, of pneumonia.

Charles Hopkins Long, Chicago; McGill University Faculty of Medicine, Montreal, Que., Canada, 1888; on the staffs of the Illinois Eye and Ear Infirmary, and the Post Graduate Hospital; aged 67; died, August 19, in the St. Francis Hospital, Escanaba, Mich., of injuries received in an automobile accident.

Robert Gates Reed, Woonsocket, R. I.; Boston University School of Medicine, 1877; for twenty-three years member of the school committee; on the staffs of the Woonsocket (R. I.) Hospital and the Homeopathic Hospital of Rhode Island, Providence; aged 80; died, August 22, of heart disease.

Ernest Frank Day ✠ Arkansas City, Kan.; University Medical College of Kansas City, 1900; served during the World War; for many years president of the board of education; on the staff of the Mercy Hospital; aged 54; died, August 9, in St. Francis' Hospital, Wichita, of duodenal ulcer.

Chauncy Mott Benedict ✠ Salt Lake City, Utah; Cornell University Medical College, 1899; past president of the Salt Lake County Medical Society; served during the World War; on the staff of St. Mark's Hospital; aged 55; died, August 29, of cerebral hemorrhage.

William S. Williams, Orient, Ohio; Kentucky School of Medicine, Louisville, 1893; member of the Ohio State Medical Association; on the staff of the Orient Institution for Feebleminded; aged 68; died, August 20, in the Grant Hospital, Columbus, of heart disease.

Edward Fayette Cary ✠ New York; Baltimore Medical College, 1906; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staff of the Manhattan Eye, Ear and Throat Hospital; aged 55; died, August 14, of agranulocytic angina.

William Thomas Rogers, Luverne, Ala.; University of Alabama Medical Department, Mobile, 1900; member of the Medical Association of the State of Alabama; aged 57; died, August 4, in a hospital at Montgomery, of septicemia, due to a carbuncle.

John Wesley Elerick, Ottumwa, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1890; member of the Iowa State Medical Society; on the staff of the Ottumwa Hospital; aged 80; died, August 13, in Iowa City, of carcinoma of the liver.

George Knapp Farris ✠ Vienna, Ill.; St. Louis University School of Medicine, 1906; past president of the Johnson County Medical Society; aged 51; died, September 1, in the Lightner Hospital, Harrisburg, of injuries received in an automobile accident.

Fletcher Langdon, Cincinnati; Ohio-Miami Medical College of the University of Cincinnati, 1910; member of the Ohio State Medical Association; aged 45; died, April 17, of cardiorenal vascular disease and acute dilatation of the heart.

Allen Crum Davis ✠ Lamar, Colo.; University of Colorado School of Medicine, Denver, 1909; formerly secretary of the Prowers County Medical Society; aged 48; died, August 23, in Pueblo, of acute coronary obstruction.

John Sheridan Wiseman, Beaver, Ohio; Miami Medical College, Cincinnati, 1893; member of the Ohio State Medical Association; aged 65; died, August 22, at Atlanta, Ga., of cystitis, chronic nephritis and pyelitis.

David Allen Walker, Friendship, Tenn.; Vanderbilt University School of Medicine, Nashville, 1880; formerly mayor of Trenton; aged 75; died, August 13, of cholecystitis and carcinoma of the gallbladder.

Elisha Jefferson Gray, Tecumseh, Okla.; University of Nashville (Tenn.) Medical Department, 1889; member of the Oklahoma State Medical Association; aged 68; died, August 5, of cerebral hemorrhage.

Charles Hyatt Richardson, Montezuma, Ga.; College of Physicians and Surgeons, Baltimore, 1883; member of the Medical Association of Georgia; aged 72; died, August 17, of carcinoma of the face.

Miles Frost Blackwell, Brownwood, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1929; aged 27; died, August 27, in the Charity Hospital, Shreveport, La., of heart disease.

William A. Ligon, Pewee Valley, Ky.; University of Louisville School of Medicine, 1874; Civil War veteran; aged 92; died, August 6, of sarcoma of the right testicle and arteriosclerosis.

Harris Diaz Whittington, Amarillo, Texas; Baylor University College of Medicine, Dallas, 1915; served during the World War; aged 42; died, in August, at Fort Worth, of heart disease.

George W. Hoxsey, Wenatchee, Wash.; American Medical College, St. Louis, 1889; member of the Washington State Medical Association; aged 71; died, July 10, of carcinoma of the stomach.

Theodore Frederic Trumpp, Brooklyn; Long Island College Hospital, Brooklyn, 1903; member of the Medical Society of the State of New York; aged 52; died, August 28, of encephalitis.

Ernest L. Martin ✠ Lansing, Mich.; University of Michigan Medical School, Ann Arbor, 1900; aged 55; died, August 14, in the University Hospital, Ann Arbor, of acute monocytic leukemia.

John Joseph Haley ✠ Gloucester City, N. J.; Jefferson Medical College of Philadelphia, 1890; aged 66; died, September 1, in the Cooper Hospital, Camden, of carcinoma of the prostate.

William Edgar Williamson, Dyersburg, Tenn.; Memphis Hospital Medical College, 1905; aged 68; died, August 6, in the Baird-Brewer General Hospital, of cardiovascular renal disease.

Walter Spencer Wunderly ✠ Bridgeport, Conn.; Tufts College Medical School, Boston, 1919; on the staff of the Bridgeport Hospital; aged 36; died, August 13, of heart disease.

Thomas Vincent Higgins, Brooklyn; Long Island College Hospital, Brooklyn, 1907; aged 46; died, August 26, in St. Vincent's Hospital, New York, of septicemia and heart disease.

David Robert Kline, Cleveland; Cleveland College of Physicians and Surgeons, 1896; served during the World War; aged 55; was found dead in bed, August 7, of heart disease.

T. J. Laird, Lorenzo, Texas; Physio-Medical College of Texas, Dallas, 1906; aged 73; died, August 16, in a hospital at Lubbock, of acute dilatation of the heart and chronic nephritis.

Monroe S. Blazer, Manito, Ill.; Missouri Medical College, St. Louis, 1874; Civil War veteran; aged 88; died, August 22, in the St. Francis' Hospital, Peoria, of chronic myocarditis.

Dwight Sidney Woodworth ✠ Fitchburg, Mass.; Medical Department of Columbia College, New York, 1876; aged 79; died, August 31, of mitral insufficiency and arteriosclerosis.

Theodore Hudson, Marion, Ill.; University of Nashville (Tenn.) Medical Department, 1878; aged 81; died, September 1, as the result of injuries received in an automobile accident.

George Benson Kuykendall, Portland, Ore.; Willamette University Medical Department, Salem, 1872; aged 88; died, July 24, of coronary arteriosclerosis and diabetic mellitus.

Samuel Stevens Dick, Wyoming, Ohio; University of Cincinnati College of Medicine, 1928; aged 36; died, August 28, in the Cincinnati General Hospital, of acute toxic hepatitis.

Harry M. Ferguson ✠ Morris, Ill.; Rush Medical College, Chicago, 1890; past president of the Grundy County Medical Society; aged 61; died, September 4, of angina pectoris.

Paul Christen Jensen, Manistee, Mich.; University of Michigan Medical School, Ann Arbor, 1882; health officer of Manistee; aged 76; died, August 16, of heart disease.

William Tillman Duke ✠ Glen Allan, Miss.; University of Tennessee College of Medicine, Memphis, 1916; aged 41; died, July 23, in Galveston, Texas, of angina pectoris.

Herman Robergh, New York; Alexander University, Finland, 1900; aged 58; died, August 21, in the Presbyterian Hospital, of pulmonary tuberculosis and diabetes mellitus.

Edward Shepherd Grigsby, Brentwood, Calif.; Hahnemann Medical College and Hospital of Philadelphia, 1894; aged 63; died, July 3, of chronic interstitial nephritis.

Madison Jackson Gray, Portland, Ore.; University of Nashville (Tenn.) Medical Department, 1880; aged 78; died, June 26, of chronic myocarditis and endocarditis.

Charles Clement Brace, Tarrytown, N. Y.; Hahnemann Medical College and Hospital, Chicago, 1875; aged 81; died, August 26, at Star Lake, N. Y., of pneumonia.

Edward A. Younger, San Francisco; Medical Department of the University of California, 1879; aged 70; died, August 15, of chronic myocarditis and diabetes mellitus.

Perry C. Thompson, Evanston, Ill.; Rush Medical College, Chicago, 1883; member of the Illinois State Medical Society; aged 81; died, August 13, of heart disease.

John Alexander Morgan, Yonkers, N. Y.; New York Homeopathic Medical College and Hospital, 1900; aged 71; died, August 13, of cerebral hemorrhage.

Francis Rene Martin, Crowley, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1885; aged 72; died, June 25, of nephritis.

Frank H. Bierbaum, Cincinnati; Cincinnati College of Medicine and Surgery, 1894; aged 66; died, August 20, of chronic nephritis and heart disease.

Elias P. Robinson, New York; Long Island College Hospital, Brooklyn, 1902; aged 66; died, June 6, of hypertension and disease of the coronary artery.

Robert L. Anderson, Inverness, Miss.; Memphis (Tenn.) Hospital Medical College, 1903; aged 55; died, May 31, of lobar pneumonia and Friedreich's ataxia.

R. L. Robinson, Troy, Mo.; St. Louis Medical College, 1876; aged 77; died, August 4, in St. Anthony's Hospital, St. Louis, of cerebral hemorrhage.

Francis Belden Putnam, Syracuse, N. Y.; Homeopathic Hospital College, Cleveland, 1879; aged 80; died, August 22, of carcinoma of the stomach.

Joseph C. Remi Charest, Marshall, Minn.; School of Medicine and Surgery of Montreal, Que., Canada, 1885; aged 69; died, August 6, of nephritis.

Helena A. Hunt, Los Angeles; University of Southern California School of Medicine, 1907; aged 68; died, July 7, of carcinoma of the esophagus.

Charles Frederick Wade, Piedmont, Calif.; Cooper Medical College, San Francisco, 1889; aged 78; died, July 16, of arteriosclerosis and senility.

William Wright Haden, Huntsville, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1891; aged 74; died, August 13, of senility.

James Horace Smith, Orlando, Fla.; Atlanta Medical College, 1877; formerly mayor and member of the school board; aged 78; died, June 20.

Annie Hungerford White, Chicago; Hahnemann Medical College and Hospital, Chicago, 1896; aged 84; died, August 20, of coronary sclerosis.

Thomas E. Reed, Middletown, Ohio; Hahnemann Medical College of Philadelphia, 1872; aged 86; died, August 15, of cerebral hemorrhage.

Charles William Reagan, Macon, Mo.; University of Missouri School of Medicine, Columbia, 1884; aged 75; died, July 31, of heart disease.

George B. M. Erwin, Granite City, Ill.; Barnes Medical College, St. Louis, 1900; aged 68; died, September 2, of cerebral hemorrhage.

Walter William Stein ✠ Baytown, Texas; Baylor University College of Medicine, Dallas, 1926; aged 28; was drowned, July 5.

Lewis D. Whissenant, Morris, Ala. (licensed, Alabama, 1878); Confederate veteran; aged 84; died, August 12, of arteriosclerosis.

William Mc. Austin, Beaukiss, Texas (licensed, Texas, under the Act of 1907); aged 82; died, August 10, of cerebral hemorrhage.

George L. McNeal, Kokomo, Ind.; Eclectic Medical Institute, Cincinnati, 1898; aged 59; died, August 8, of cerebral hemorrhage.

Jacob E. Kitchel ✠ Galveston, Ind.; Medical College of Indiana, Indianapolis, 1902; aged 57; died, August 15, of tuberculosis.

William Frederick Hurst, New York; Syracuse University College of Medicine, 1925; aged 30; was found dead, August 31.

Robert Estes Lee, Oxford, Ind.; Kentucky School of Medicine, Louisville, 1890; aged 64; died, August 15, of carcinoma.

Eberle K. Shelton, Sr., Colorado Springs, Colo.; Cincinnati College of Medicine and Surgery, 1876; aged 78; died, August 8.

Franklin E. L. Hester, Glenwood, Iowa; Missouri Medical College, St. Louis, 1883; aged 71; died, August 11, of pernicious anemia.

James F. Noland, Logansport, Ind.; Kentucky School of Medicine, Louisville, 1886; aged 72; died, August 25, of heart disease.

Thomas Annerson Jones, Birmingham, Ala.; Birmingham Medical College, 1898; aged 63; died, in August, of heart disease.

Alexander S. Tuchler, San Francisco; California Medical College, 1892; aged 71; died, July 8, of cerebral hemorrhage.

Albert W. Post, Tioga Center, N. Y.; Geneva (N. Y.) Medical College, 1871; aged 82; died, August 16, of carcinoma.

John J. Beekman, Columbus, Ohio; Columbus Medical College, 1876; aged 79; died, August 23, of pyelonephritis.

Bureau of Investigation

MISBRANDED "PATENT MEDICINES"

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the United States Department of Agriculture

Red Cross Chill and Fever Tonic.—The Cash Bros. Drug Company, Inc., Jacksonville, Fla., shipped in February, 1929, into Georgia a quantity of Red Cross Chill and Fever Tonic that was declared misbranded. The preparation consisted essentially of quinine sulphate (about 6½ grains to the fluid ounce), iron (ferric) chloride, epsom salt, and a small amount of hydrochloric acid. The claims that it was a remedy for all malarial diseases, intermittent fever, bilious fever, influenza, etc., were declared false and fraudulent, and in September, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 17209; issued January, 1931.*]

Vindor Diabetic Wine.—The Zarol Medical Research, Inc., New Haven, Conn., shipped in September, 1929, into Pennsylvania a quantity of Vindor Diabetic Wine that was declared misbranded. The stuff consisted essentially of extracts of plant drugs, including cinchona, a phosphorus compound, alcohol and water. The product was declared misbranded, first, because the claim that it was a wine was false and misleading in that the article contained ingredients not native to wine; further, the claim that it was a remedy for diabetes was declared false and fraudulent. In March, 1930, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 17210; issued January, 1931.*]

Pinoleum.—This preparation was being offered for sale in December, 1929, in Porto Rico. It consisted essentially of mineral oil containing small amounts of volatile oils, including camphor, menthol and pine, eucalyptus and cassia oils. The claims that it was a remedy for influenza, nose and throat disease, hay fever, bronchitis, etc., were declared false and fraudulent. In March, 1930, Llompart Brothers Company of San Juan, Porto Rico, claimed the property. Judgment was entered and the product was released to these people upon the execution of a bond requiring it to be relabeled truthfully.—[*Notice of Judgment 17213; issued January, 1931.*]

Laxative Cold and Grippe Tablets.—In December, 1928, Parke, Davis and Company, Detroit, shipped to Memphis, Tenn., one million Laxative Cold and Grippe Tablets that were declared misbranded. The tablets consisted, essentially, of acetanilid (1.85 grains per tablet), cinchonidine and a laxative plant drug. The product was declared misbranded, because while the tablets contained acetanilid, the package failed to bear a statement on the label of the quantity and proportion of this drug; furthermore, the labels bore false and fraudulent statements regarding the therapeutic effects of the drug. In February, 1930, the J. R. Watkins Company of Memphis appeared as claimant, judgment of condemnation and forfeiture was entered, and the court permitted the product to be released to the Watkins concern on payment of the costs and the execution of a bond, conditioned in part that the product be relabeled truthfully and in accordance with the law.—[*Notice of Judgment 17216; issued January, 1931.*]

Lax Cold Grippe Tablets.—Strong-Cobb and Company, Cleveland, Ohio, shipped in November, 1928, to Memphis, Tenn., 450,000 Lax Cold Grippe Tablets that were declared misbranded. The tablets consisted essentially of acetanilid (1.85 grains per tablet), cinchonidine and a laxative plant drug. The product was declared misbranded because the packages failed to bear a statement on the label of the quantity or portion of acetanilid; furthermore, the label bore false and fraudulent claims for curative effect. In February, 1930, the J. R. Watkins Company of Memphis appeared as claimant. Judgment of condemnation and forfeiture was entered, and the court permitted the product to be released to the Watkins Company on payment of the costs and the posting of a bond, conditioned in part that the preparation be relabeled under the supervision of the Department of Agriculture.—[*Notice of Judgment 17217; issued January, 1931.*]

Chill-Check.—The Bedsole-Colvin-O'Dell Drug Company, Birmingham, Ala., shipped in July, 1929, into Mississippi a quantity of Chill-Check that was declared misbranded. The stuff consisted essentially of epsom salt, iron chloride, quinine sulphate (3.47 grains to the fluidounce), and water. The claims that it was a remedy for influenza, chills and fever, malaria and biliousness were declared false and fraudulent, and in March, 1930, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 17220; issued January, 1931.*]

Stopkofin.—The Piuma Italian Pharmacy, Los Angeles, Cal., shipped in March, 1929, into Texas a quantity of Stopkofin that was declared misbranded. The preparation consisted, essentially, of ammonium chloride, ammonium carbonate, potassium iodide, antimony and potassium tartrate, extracts of plant drugs including podophyllum, a trace of chloroform, alcohol (28 per cent), sugar and water. It was declared misbranded, first, because the amount of alcohol present was not declared; in fact, the bottle label stated that the product contained no alcohol. It was further declared misbranded, because the claim that it was a remedy for coughs, bronchitis, spasmodic croup, influenza, etc., was declared false and fraudulent. In January, 1930, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 17222; issued January, 1931.*]

Correspondence

AN INTERNATIONAL ORGANIZATION FOR THE DISSEMINATION OF MEDICAL KNOWLEDGE

To the Editor:—During the last few months, brief notices have appeared in the medical journals and daily press of a method of treatment for Addison's disease discovered by American scientists. In none of the European publications, however, has a comprehensive report of this most important discovery appeared.

January 24, an article entitled "Addison's Disease: Experiences in Treatment with Various Suprarenal Preparations," by Drs. L. G. Rowntree, C. H. Greene, W. W. Swingle and J. J. Pfiffner, appeared in THE JOURNAL. In the February 11 issue of the *Proceedings of the Staff Meetings of the Mayo Clinic* appeared a report by Drs. R. G. Ball and John Lansbury on two patients suffering from Addison's disease, treated with success by means of the suprarenal cortical hormone of Swingle and Pfiffner.

Since these articles appeared to have escaped general notice, it seemed to me opportune to call attention to the facts they record in an article, which appeared in the April issue of *Fisiologia e medicina.*

The fact itself is notable, in theory and practice. Not less striking is the comment of Dr. L. G. Rowntree of the Medical Division of the Mayo Clinic: "There is one dire need, the need for a great deal of experimental work. This has been impossible, for at no time have we had sufficient material for thorough trial. A fund should be raised, sufficient to save the lives of the 500 to 1,000 patients who will die of Addison's disease this year without such aid."

It is significant that such an appeal can emanate from a source of so great scientific and economic authority as the Mayo Clinic.

Two questions immediately present themselves.

How long will it take before this important discovery is known to the medical profession, throughout the civilized world, and before it is possible to amass sufficient funds and material for the experimental work asked for by the Mayo Clinic?

How long will it be before the new hormone may become universally available for the saving of the hundreds and thousands of lives sacrificed yearly to this fell disease?

It would be not less interesting to know how much time elapsed between the discovery of insulin and its use in diabetes, the discovery of extracts of liver for the cure of pernicious anemia, and the general application of this knowledge; and how many lives were lost needlessly during this period. The pace of scientific discovery is so rapid that new scientific facts of analogous importance may be expected from year to year to be given to the world. Yet the announcement of such discoveries, often prematurely and inaccurately reported in spite of the prudent reserve of scientists and clinicians, is actually made in so empiric a fashion that much time is lost, and in many cases false hopes are raised for the cure of disease for which no saving discovery has yet been made.

Is it possible to suggest a method less wasteful of human lives and hopes?

I submit that it might readily be made possible by the organization within some one of the great international bodies (such as the International League of the Red Cross or the League of Nations) of a committee of eminent scientists and clinicians, charged with the duty of observation and propaganda, a committee or group in relation with an analogous body in each individual nation. Representatives of the individual nation would bring to the attention of the international committee such discoveries made by their countrymen as are of proved and indisputable value. The international committee would be able not only to stamp such discoveries with their authority but to make them known and available so rapidly that many lives could be saved which are now sacrificed to prejudice, ignorance and delay. An official pronouncement, by an international committee of unquestioned competence, and an efficient service of universal propaganda would, I feel sure, not only be easily practicable but would mark a step forward in the international campaign for the conquest of disease. I am the more confident that this suggestion may be acted on since other projects of mine in the field of international social hygiene have during and since the war been put successfully into practice through the International Red Cross (Geneva) and the League of the Red Crosses (Paris).

Ettore Levi,
Via Antonio Bertoloni No. 1,
Rome, Italy.

Formerly Member of the Supreme Council of Hygiene and Vice President of the Italian Board of the Invalids of War.

DENIAL OF TESTIMONIAL FOR ADENEMIN

To the Editor:—There is being circulated a photostat letter written by Dr. A. P. Andrus of my clinic to the Adenemin Company of Chattanooga, Tenn., extolling the virtues of Adenemin, a remedy of which I personally know nothing.

Dr. Andrus, the author of the letter, is dead and when he wrote it could not have thought of the embarrassment it might cause me.

I wish to disclaim any knowledge of this letter until a copy of it reached me through the mail. Had I been consulted about it I would not have approved the sending of such a letter from our clinic.

I wish the profession to know that this letter was written without my knowledge or consent and has only brought me embarrassment and chagrin.

J. M. Dodd, M.D., Ashland, Wis.

PROPHYLAXIS OF RINGWORM OF THE FEET

To the Editor:—I have read with much interest Osborne and Hitchcock's article "The Prophylaxis of Ringworm of the Feet" as it appeared in The Journal, August 15. I found their contribution valuable for two particular reasons: It offers a practical means of preventing probably the most common of all skin disorders. Secondly, there are bacteriologic conclusions to substantiate the clinical observations.

In reference to their article, there are important points I should like to discuss. In comparing their use of from 0.5 to 1 per cent solution of sodium hypochlorite (a modified Dakin or Labarraque solution) with mine of from 3 to 15 per cent sodium thiosulphate (The Journal, April 18), Osborne and Hitchcock state concerning the latter that "carrying this chemical into the pool may have disastrous consequences because of the reduction of sodium hypochlorite [in the pool] to sodium chloride." With my procedure there was no danger of the thiosulphate being carried into the pool for "each pupil on leaving the shower was requested to immerse the feet in this [thiosulphate] chemical bath on the way to the locker." The procedure was: locker room, shower, pool, shower, foot bath, locker room. Daily chlorine content and results of frequent bacteriologic examinations of the pool water were the same after using sodium thiosulphate prevention as before. It is rather universal for the shower to be used immediately before the pool is entered.

If the chemical behavior of the two substances is to be discussed, it might be well to note that sodium hypochlorite solutions are relatively unstable unless special solutions are employed. These are more expensive. In general, sodium hypochlorite solutions should be maintained at low temperatures with excess alkali and in the absence of any substance such as iron or the heavy metals which might act catalytically to promote a conversion to the chlorate. It is possible, of course, to make a cheap, fresh hypochlorite solution in the fashion employed by the housewife when making the so-called Javel water. To those familiar with this method, the objections of a milky solution plus the knowledge required to make a solution of definite concentration are obvious.

The authors state also that "higher percentages of sodium thiosulphate are required as a fungicide and the chemical is therefore much more expensive than sodium hypochlorite." The pea sized sodium thiosulphate crystals used for the foot bath make the bath cost less than one-tenth that of a similar solution of sodium hypochlorite.

Furthermore, as I have mentioned, "it undoubtedly is frequently not so much the medicament that fails as it is the method of application." I firmly believe that the means "the foot bath" was more important in itself than was either of the chemicals. Mercurochrome, iodine and other popular remedies frequently fail because "swabbing is usually done on the more important areas and not the more obscure where the tinea may be just as plentiful as a constant source of reinfection." The foot bath covers all areas of the feet. However, it has certain disadvantages. It must be prepared for use each day. It requires a special container or a built-in floor recess. It can be applied only to the floors and to the feet—not to the footwear, which form good culture mediums for the organisms and are possibly the greatest causes of reinfection. The liquid, too, would be rather cumbersome for other than a well organized cooperative institution, as a large public school.

"A powder of 20 per cent sodium thiosulphate in boric acid has been tried with much success on feet, footwear, and floors." To secure the best results two triads must be remembered—*floors, feet* and *footwear* for the *prevention, treatment,* and *prevention of reinfection.* The solution falls short—the powder takes care of all. On the floors the powder, being soluble, is clean and forms no scum. It is ready at all times in proper proportions and it is not necessary to rely on any one to make

fresh solutions of the proper strength. It can be used for individuals or for groups. It can be used in any school or institution, large or small, or even in the home. It requires no definite set-up or organization. Most important of all, the powder form is an ideal means—most practical, thorough and efficient—requiring a minimum of time and effort in its application. It obviates the need of foot pans or "wells" in the floors. The powder has proved successful in the treatment of many cases of long standing in adults as well as in children.

WILLIAM L. GOULD, M.D., Albany, N. Y.
Medical Supervisor of Schools.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HAZARDS IN MINING POTASSIUM NITRATE

To the Editor:—We are confronted with a new enterprise, that of mining nitrate of potash. I wish to know whether any special hazard relative to the health of the laborers exists in this new class of mining. So far as I know, no potash is mined in the United States. I have noticed some unusual liver troubles, as well as numerous sores about the hands and feet of the workers. I would appreciate your answer through THE JOURNAL.

M. B. CULPEPPER, M.D., Carlsbad, N. M.

ANSWER.—This reply is limited to mining operations and specifically does not include refining of potassium nitrate or the mining of other forms of potassium, such as are obtainable from alunite. Apart from hazards attending mining in general, the small content of potassium nitrate may be associated with gross amounts of siliceous mineral material such as feldspar and glauconite. Manipulation of such mined material may introduce the hazard of silica dust. Sodium carbonate is likewise found along with potash and if present in large amounts may give rise to skin lesions among exposed workmen. Any mineral dust is harmful when taken into the body by respiration. However, on a relative basis, most earthy dusts are harmless compared with the dangerous qualities of silica and silicates, including asbestos. If, however, the nitrate is present in the crude mineral as mined in such quantities as to exceed 1 per cent of the dust in very dusty operations, some harm may be expected. When the concentration within the blood is in excess of 0.05 per cent, potassium nitrate becomes toxic. Anemia, low hemoglobin, loss of weight, low grade nephritis, excessive fatigability, low blood pressure, bradycardia and headaches are possibilities. Under experimental conditions it has been found that undue amounts of chlorides are lost from the body when potassium nitrate is present in the blood stream. Assuming this to be true, an unusual hazard arises. Whenever profuse perspiration is sustained, under any work conditions, large amounts of chlorides are lost (easily approximating 20 Gm. daily). This loss, if not replaced through the addition of sodium chloride to the drinking water supply (from 0.25 to 1 per cent), results in discomfort and much lowered work capacity. If potassium nitrate accelerates this chloride loss, a greater degree of incapacity may arise.

The newness of this form of mining in this country has produced no experience on which to predicate definite statements. This comment, therefore, is made guardedly.

RISE IN TEMPERATURE DURING MENSTRUATION

To the Editor:—Could you refer me to a source of information on the subject of body temperature in relation to the menstrual cycle? I have a patient with a periodic rise of about 1 degree, beginning ten or twelve days after menstruation and dropping to normal at the period. After a day or two there is an afternoon rise to around 99, which continues until time for the next rise (from ten to twelve days). Even if the primary cause of the fever is an infection (probably it is tuberculosis), the periodicity to me suggests a relation to the ovarian or the pituitary function. I should like to read some literature on the subject. Please omit name.

M.D., California.

ANSWER.—A fairly large number of contributions have been made concerning the effect of the menstrual cycle on the body temperature. A summary of some of them may be found in Emil Novak's "Menstruation and Its Disorders," New York, D. Appleton & Co., 1921, pp. 85-87. Additional information may be found in H. Vignes's "Physiologie gynécologique et médicine des femmes," Paris, Masson et Cie, 1929, pp. 175-179. There seems to be no uniformity of opinion concerning this question. Some authors believe that the menstrual cycle has no effect on the temperature. Others maintain that there is a characteristic elevation of temperature a few days before the onset of bleeding and a drop during the time of the menstrual flow, whereas still others assert that just the reverse of this is the truth. Most authors who believe in a "menstrual wave" are of the opinion that there is an elevation of temperature a few days before the menstrual period. Since in the case cited there is not much rise in temperature, it may be that this patient exhibits a true "menstrual wave." Some gland or glands of internal secretion, most likely the pituitary and the ovaries, may then be held responsible for this occurrence. However, a thorough general examination should be made to rule out any infection which may be the cause of the elevation of temperature. The temperature in cases of tuberculosis frequently shows a rhythmic variation during the menstrual cycle.

EXOSTOSES OF HEEL FOLLOWING GONORRHEAL ARTHRITIS

To the Editor:—I have had under my care for five months a man about 25 years of age, giving a history of having had gonorrhea one year ago. This was followed by arthritis, which settled in his heels. Diagnosis of exostoses of the heel was made, and operation performed, but he did not obtain any relief. Three months later he came to me. Roentgen examination at this time showed large exostoses of both heels. Operation was advised, and the exostoses were removed. He had relief for only a short while. The pain continued, and roentgenograms, taken June 8, 1931, revealed a slight clouding around the lower end of the os calcis; roentgenograms, July 7, revealed a large growth on the heel bone. Could you suggest a treatment that would prevent the growth of these exostoses if they should be removed again?

L. M. SUTTER, M.D., Orlando, Fla.

ANSWER.—It is evident that this man had, in addition to his exostoses of the calcanei, a generalized arthritis. The toxemia has not been eradicated from his system. In an article on calcaneal spurs (*Arch. Surg.* **12**:117 [Jan., part 1] 1926) Philip Lewin has shown that it is important not to operate until the infecting agent has been thoroughly eradicated, or there will be recurrence.

The patient should be put to bed and his feet treated locally with some anodyne lotion, fomentations and physical therapy, including radiant heat, massage and diathermy, while a thorough search is made for foci of infection, which should be eradicated.

It is probable that there is a residual seminal vesiculitis, which should be treated by a competent urologist. This may involve injection or vesiculectomy. The use of vaccines, such as those of Burbank or Crowe, would be in order.

The treatment of the patient as well as his local condition must be emphasized. In many cases the operative removal serves to stimulate osteogenesis. The proper treatment by means of resilient support, tilting of the heel of the shoe, longitudinal arch exercises and contrast sprays will do more good toward the relief of the symptoms than any operation at this time.

KELOIDS FOLLOWING FACIAL TREATMENT BY "BEAUTY OPERATOR"

To the Editor:—I have a woman patient, aged 50, who had some "facial treatments" for the removal of wrinkles about eight months ago by a beauty operator. The "treatment" consisted of the application of some sort of plasters to the face, something which produced a severe inflammatory reaction. The patient now has reddened keloids on both cheeks and chin and a moderate ectropion of the lower eyelids. The keloid scars on her cheeks are about 4 inches long by a half to three-fourths inch wide and of a reddened bluish color. Please advise what I can do to help her. I thought I would give her iodides, gentle massage to the face with ointment and almond oil and cod liver oil, and possibly give the face a coat of tan with the ultraviolet lamp. Please omit name.

M.D., Illinois.

ANSWER.—It may be that, when the inflammation from the treatment which this patient has had has entirely subsided and the skin has become soft instead of leathery as it now probably is, there will be a considerable spontaneous improvement and that ectropion will disappear. Until this occurs the best thing to do for the face is to use bland applications in order to hasten the disappearance. For this purpose wet dressings several hours a day should be applied. One of the best is solution of aluminum subacetate, N. F., 1 ounce, and water to make a pint. Ointment of rose water or petrolatum as an ointment applied once or twice a day is also soothing but will not do the keloids any good. Massage, ultraviolet irradiation, iodides and treatment of that sort do no good. The only things that cause absorption of keloids are x-rays or radium rays. For practical purposes x-rays are most useful in treating keloids. Masks should be

made which have openings corresponding to the scars and which protect all the other skin. Then broken doses of x-rays may be given and kept short of an actual erythema, say one fourth of an erythematic dose once a week. This should be repeated for several weeks but kept short of what the operator's experience with his apparatus tells him will produce an erythema. Under x-rays in this way most keloids can be flattened down. Young keloids are more responsive to the treatment than old ones.

ALLERGIC DERMATITIS

To the Editor:—A woman, aged 55, 5 feet 1 inch (155 cm.) in height, weighing 117 pounds (53 Kg.), a housewife, had chronic otitis media, with rupture of both ear drums, a purulent discharge at recurrent intervals, frontal sinus infection for several years with more or less headache, and endocrine imbalance with marked hypothyroidism. She received appropriate ear treatment three times a week, together with 1 grain (0.065 Gm.) of thyroid daily. Her improvement was remarkable through March, April and the first half of May. About the first of May I advised her to drink largely of milk, which she did, using 2 quarts (liters) daily in addition to other food. May 26, she developed marked eczema of the neck which, after a few days, grew better and almost disappeared. June 8, eczema returned with marked exacerbation, giving a decided appearance of erysipelas. The entire face, chest, front and back and both arms are covered and swollen. She has never had any previous attack of this nature, is not subject to hay-fever, has not changed her diet other than an increase in the use of milk, and has not changed her habits of life or her home surroundings in any wise. There also was no change of any sort in her medicine or treatment that could cause it. This case, which I consider a case of allergic reaction, is a refractory one and so far I have not been able to give much relief. There is but little itching, scarcely no rise in temperature, and almost no ill feeling of any sort other than the annoyance of the unfortunate condition. Could you give me any suggestions as to the cause or treatment of this disorder or references to literature?

GEORGE A. HARE, M.D., Fresno, Calif.

ANSWER.—It is possible that the large intake of milk could produce the eczema and it would certainly be wise to exclude all milk for a time to see whether the condition will improve; but the onset is rather recent and the age is rather late for the development of true allergy.

Perhaps the dermatitis may depend on poison ivy or even on certain other plants harmless to normal persons. Chobot is working with the ether soluble fractions of various common pollens which he finds are often responsible for seasonal dermatitis.

The following references may be consulted:

Rowe, A. H.: Food Allergy, Philadelphia, Lea & Febiger, 1931.
Moore, M. B.; Cromwell, H. W., and Moore, E. E.: Studies on Pollen and Pollen Extracts: IV. The Allergic Active Constituent in Pollen Oil, *J. Allergy* **2**: 6 (Nov.) 1930.

PSYLLIUM SEEDS AND FERMENTATION

To the Editor:—I have been prescribing psyllium seeds with fairly good results. Recently a French concern sent out circulars advertising a new product for constipation called "Coreine." In the literature they claim very emphatically that among other bulk formers psyllium is distinctly harmful, because it produces fermentation in the intestine, and hence "colitis," and may even produce intestinal obstruction. Knowing how unwarranted some claims are, I would like to get your opinion on the following: If psyllium seed tends to produce some fermentation, is this not distinctly advantageous in stimulating an aciduric flora in a toxic intestine, in this manner helping to overcome putrefactive processes?

EMANUEL W. LIPSCHUTZ, M.D., Brooklyn.

ANSWER.—The amount of fermentation that can be induced by the small quantity of psyllium seed that is taken therapeutically is insignificant as compared with the amount furnished by the fermentable material in the diet.

SOLVENT FOR ELATERIUM

To the Editor:—Will you kindly tell me how to put up the following formula:

Elaterium, powdered	1/16 grain
Hydrastinine	½ grain
Resorcinol	1 grain
Oil of thuja	2 minims
Ichthyol	8 minims

I find it impossible to find a solvent for the elaterium. Kindly omit name.

M.D., New Hampshire.

ANSWER.—Elaterium is a mixture of substances of different solubilities. It yields half of its weight to alcohol, and in this alcohol-soluble portion resides its activity. The obvious way of dispensing this material would be to mix the solid ingredients first and then add the liquids and enough powdered glycyrrhiza to form a mass that can be put into gelatin capsules.

EFFECT OF INFRA-RED RAYS ON MENSTRUATION

To the Editor:—What is the effect of infra-red rays on the menstrual function? I have three patients, one married with children, who has had the gallbladder and appendix removed and has been suffering for some time from chronic colitis. I used the lamp for the colitis with good results, but she has stopped menstruating. Before using the lamp, she menstruated every two weeks. The other married patient has been operated on for appendicitis, but, as she was not getting relief, her ureters were catheterized, and a stricture was found on the right side. Before that I used the rays with no benefit. She also had been menstruating every two weeks but has not since using the rays. The third patient, a young unmarried woman, has also been operated on for appendicitis but has spells of vomiting which last for two or more weeks. The first application of the rays stopped the vomiting but she has not menstruated since the first application. There does not seem to be any ill effect from the cessation of menstruation. Please omit name.

M.D., Maryland.

ANSWER.—Infra-red radiation is not known to have any direct effect on the ovaries or on menstrual function. The main effect of such rays on the tissues takes the form of heat, which is rapidly circulated through the blood and thus dissipated. Therefore, any ordinary therapeutic source of infra-red radiation could hardly be expected to raise the temperature of the ovaries sufficiently to affect function.

In the three cases mentioned, the information furnished is not sufficient to explain the cessation of menstrual function. This may be an indirect result of the operation. It could hardly be attributed to exposure to infra-red radiation, but more detailed information might give a clue to the factors involved.

NEURITIS IN DIABETIC PATIENTS

To the Editor:—I have several diabetic patients suffering with neuritis in the lower extremities. One patient in particular has had diabetes for twenty-six years, a slight albuminuria for the last six years, is sugar-free with blood sugar within the normal limit, and enjoys good health with the exception of severe pain in the lower extremities, especially in the afternoons and early night. Kindly give best treatment.

FLETCHER A. SMITH, M.D., Elberton, Ga.

ANSWER.—Pain in the legs in diabetes when the urine and blood sugar values are normal may be due in part to arteriosclerosis and deficient blood supply. If, however, pulsations are present in the dorsalis pedis, posterior tibial and popliteal arteries, and the feet are warm to the touch, this factor need not be considered of great importance in treatment.

Usually the diet should contain approximately 150 Gm. of carbohydrate, protein and fat sufficient to provide about 30 calories per kilogram of body weight. The use of foods rich in vitamins seems helpful and liver twice a week, cod liver oil and a yeast preparation such as Mead's Powdered Brewer's Yeast (New and Nonofficial Remedies, THE JOURNAL, May 2, 1931, p. 1477), are advised. Iron should be given if any anemia is present. Gentle massage and heat, especially in the form of warm baths at night, are helpful. Physical therapy and especially the use of a back support would be indicated if hypertrophic arthritis of the spine is a possible factor. Should the neuritis be of such severity as to produce paralysis (Root, H. F., and Rogers, M. H.: Diabetic Neuritis with Paralysis, *New England J. M.* **202**:1049 [May 29] 1930), orthopedic treatment might be necessary for the relief of toe drop or muscle contractures.

SURVIVAL OF MOSQUITOES INFECTED WITH MALARIA

To the Editor:—If a mosquito bites an individual with malarial fever this summer and obtains malarial organisms in its system, can it live through the winter and transmit that malaria to an individual next summer? In other words, is malarial fever carried through the winter by the malaria mosquito? This brings up the question of whether malaria mosquitoes live through the winter or are propagated by eggs that remain quiescent during the winter. Please give your authority.

WILLIAM MARTIN CASON, M.D., Sandersville, Ga.

ANSWER.—Recent research indicates that once a mosquito has become infected and has infective sporozoites in its salivary glands it can survive long periods and be infective with a rise of temperature (James, S. P., and Shute, P. G.: Report of the First Results of Laboratory Work on Malaria in England, League of Nations, Health Organization, Malaria Commission, 1926). When mosquitoes have become infected but the parasites have not reached the sporozoite stage, for example, have progressed only to the oocyst stage, some work indicates that the parasites are not capable of completing their development with a rise of temperature (Boyd, M. F.: An Introduction to Malariology, Cambridge, 1930). Therefore, if a mosquito has become infected one summer and has sporozoites in its salivary glands, it is probably possible for it to transmit the infection

the next spring. In spite of this, all evidence indicates that for the most part malaria is carried over the winter in human beings rather than in mosquitoes.

In this country south of the thirty-second parallel mosquitoes can develop throughout the winter. Where there are only short freezing spells, various stages can survive. As a whole, however, where winters are severe it is the adult female that hibernates (Boyd).

TUBERCULOUS ORCHITIS

To the Editor:—Please advise me as to the following patient: E., a man, aged 27, had one testicle removed one year ago on account of gross destruction due to tuberculosis. Three months ago he had the epididymis of the remaining testicle removed because of tuberculosis. The remaining testicle now shows considerable enlargement and nodular growth where the epididymis was removed. The lymphatic glands draining this area are enlarged and can be palpated through the abdominal wall. The patient has been confined to his bed since the last operation three months ago. He has increased pulse but no elevation of temperature. His physical condition is fair but he has no inclination to get up and about. Should the diseased testicle be removed or should it be left, possibly to furnish some glandular secretion? Please omit name and address.

M.D., Tennessee.

ANSWER.—Extensive surgical operations in instances of tuberculosis of the epididymis as a rule are not especially successful. They are apt to incite spreading of the process. Surgical intervention should be confined to draining of abscess cavities and removal of caseous masses and necrotic skin flaps. The method of choice in tuberculous epididymitis is the administration of mild roentgen treatments supported by the usual general regimen indicated in tuberculous conditions. The resulting functional depression of the intermediate testicular cells is of a temporary character only and in this way the endocrine function of the testicular cells may be preserved. The irradiation, of course, should include the enlarged glands.

DEVICES TO INTENSIFY SOUNDS THROUGH STETHOSCOPES

To the Editor:—I have a slight defect in hearing and should like to know whether you can suggest any kind of stethoscope that would aid me in making heart and lung examinations. Please omit name.

M.D., Oklahoma.

ANSWER.—There are various devices which aim to intensify the chest sounds through a stethoscope. It might be advisable for any one who finds himself in need of one of these devices, because of a defect in hearing, to take the matter up with an instrument firm and try out for himself the device that suits his particular case. Pollard's high tension stethoscope is used a good deal, as is also Bowles' diaphragm stethoscope. Recently efforts have been made to develop an electrical stethoscope, but whether these electrical devices have any advantage over the ones mentioned is yet to be demonstrated.

SKIN LESIONS DURING MENSTRUATION

To the Editor:—A woman, aged 30, unmarried, has always had painful menstruation. Apart from childhood diseases and furunculosis six years ago, which responded to vaccine treatment, her past history is negative. For a year she has been developing a patchlike eruption on the tip or margin of the tongue. This lesion appears on the day previous to or on the day of the onset of the menses, following this rule rigidly even when the menses should be retarded or appear one week before they are expected. Irregularity of the menses has occurred only during the past few months. The patches disappear entirely at cessation of the menses. A small red patch makes its appearance at or near the tip of the tongue, sometimes at the margin, spreading rapidly in either direction until it occupies the margin, tip and lower surface of the anterior half of the tongue. At the onset the lesion is rather round, gradually becoming ovoid. It is shallow with a bright red surface; there is no elevation or infiltration at the margin of the ulcer-like "sore." As the menstruation nears its end, the lesion gradually heals from the center. A 10 per cent solution of silver nitrate, if applied early, has the effect of checking further spreading and hastening healing. There is no elevation of temperature; the patient complains only of some weakness during the menstrual period. There is no clinical evidence of any blood derangement. Dentibuccal ulcer can be excluded, as care was taken to cooperate with the patient's dentist. Tonic medication, such as iron, cod liver oil and calcium, and antiacidotic measures, had no effect whatever. I should like suggestions as to diagnosis and more than just symptomatic treatment. Please omit name.

M.D., New York.

ANSWER.—Certain lesions of the skin and mucous membrane associated with the menstruation occur not infrequently. The most frequent skin manifestations are herpes, acne, urticaria, various erythemas and pigmentation of the skin, especially of the eyelids. The lesion on the tongue in the case cited may be herpes. This condition usually involves the external genitalia, the face, the lips, the thighs and the buttocks, but it may involve the mucous membranes. At least two cases have been reported in which an herpetic eruption occurred on the cornea during menstrual periods. Some women have herpes, especially the genital type, during every menstrual period, whereas others have it for a limited time only. In a series of 877 cases of genital herpes, Bergh found that 73.4 per cent were of menstrual origin. This disorder is almost unknown in young girls who have not yet begun to menstruate.

The most likely cause of the association of the tongue lesion and the menstrual cycle in the case cited is some aberration in one or more glands of internal secretion. No specific treatment can be recommended. There is no harm in trying the administration of ovarian extract and anterior lobe of the pituitary. Niedermeyer reported a case of corneal herpes which occurred at the menses and was associated with disturbances in vision. He obtained a cure by giving injections of ovarian extract.

TREATMENT OF ANAL PRURITUS

To the Editor:—Please advise me how to treat a case of itching piles in a woman, aged about 50, who gives an almost normal physical examination except for three small external and a few internal hemorrhoids. These do not bleed or cause any pain, but since she took several colonic irrigations and enemas she has suffered intensely from rectal itching. Local applications and ointments have not given relief. There is no leukorrhea that might be causing irritation. Please omit name.

M.D., North Carolina.

ANSWER.—There are so many causes for anal pruritus and the treatment varies so greatly, depending on rectal, anal or cutaneous disorders, that it is difficult to suggest treatment without study of the individual case. In this case, undoubtedly some surgical intervention is necessary before the infection of the skin will clear up with treatment of any kind. The patient should use no dry, detergent paper. The anal region should be bathed with hot or cold water, with absorbent cotton only, with no rubbing or scratching, after every stool and on retiring. The part should be dried without rubbing, and then zinc stearate powder applied if the skin is moist. If dry, a soothing ointment such as zinc oxide should be applied. If these do not relieve, two or three applications of a saturated solution of potassium permanganate might be tried at intervals of one week, dry, and then a mild salicylic acid unguent. The patient must not rub or scratch. There is no specific for this trouble.

TREATMENT OF MENOPAUSAL SYMPTOMS

To the Editor:—I have a patient who is evidently undergoing the menopause, characterized by flashes of heat and cold, marked nervous irritability, and the absence of menstruation for about two years. The basal metabolism rate, urine and blood pressure are normal. The general health, outside of the symptoms of the menopause, is very good. She has been taking ovarian extract and sedatives by the mouth for about one year, but there is no improvement and when the flashes of heat occur, which take place several times a day, she has profuse perspiration and increased irritability. Is there anything that you could suggest in this case? If reply is published, please omit name.

M.D., California.

ANSWER.—It is frequently impossible to bring about a cessation of troublesome menopausal symptoms, especially the vasomotor phenomena, by any known therapeutic aids. Desiccated ovarian preparations given by mouth are considered ineffective by the Council on Pharmacy and Chemistry (THE JOURNAL, June 21, 1930, p. 1997). Even the hypodermic administration of ovarian extract is far from being a specific for menopausal disturbances, if, indeed, any effect is produced. Small doses of belladonna are sometimes helpful for the hot flashes and profuse perspiration. Sedatives such as the bromides and phenobarbital should also be given. Attention should be directed toward building up the patient's general condition. This includes proper diet, sufficient rest and sleep, care of the bowels and, most important, impressing the patient with the harmfulness of worry and overanxiety.

TREMOR OF THE HANDS

To the Editor:—A man, aged 39, shows no physical defect in any way and has no history of venereal disease or of alcoholism, but his hands shake and tremble, especially if he extends his hands outward. This condition is not constant. There is no history of tuberculosis, cancer or insanity in his family. Could this be a beginning paralysis agitans?

D. E. LITTLE, M.D., Eufaula, Okla.

ANSWER.—This might possibly be paralysis agitans, although in that disease the tremor usually occurs with the hands at rest. A tremor, existing for a long time as the only symptom and aggravated by any voluntary movement, is often of the kind known as "essential" or "hereditary" tremor. In this case, history of other cases in the family is usually obtainable.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: Written examination for Group III candidates to be held in eighteen cities in the United States and Canada, Oct. 31. *Clinical examination for all candidates.* Chicago, Dec. 29. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

ARKANSAS: *Basic Science.* Little Rock, Nov. 2. Sec., Mr. Louis E. Gebauer, 1002 Donaghey Bldg., Little Rock. *Regular.* Little Rock, Nov. 10-11. Sec., Dr. Sam J. Allbright, Searcy. *Eclectic.* Little Rock, Nov. 10. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith. *Homeopathic.* Eureka Springs, Nov. 10. Sec., Dr. Allison A. Pringle, Eureka Springs.

CALIFORNIA: Sacramento, Oct. 19-22. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Basic Science.* New Haven, Oct. 10. Address State Board of Healing Arts, 1895 Yale Station, New Haven. *Regular.* Hartford, Nov. 10-11. Sec., Dr. Thomas P. Murdock, 147 West Main St., Meriden. *Homeopathic.* New Haven, Nov. 10. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

GEORGIA: Atlanta, Oct. 13-14. Sec., Dr. B. T. Wise, Americus.

HAWAII: Honolulu, Oct. 12-15. Sec., Dr. James A. Morgan, 48 Young Bldg., Honolulu.

ILLINOIS: Chicago, Oct. 13-15. Supt., Mr. Paul B. Johnson, Springfield.

IOWA: Des Moines, Oct. 20-22. Dir., Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MAINE: Portland, Nov. 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, Nov. 12-14. Sec., Dr. Stephen Rushmore, 144 State House, Boston.

MICHIGAN: Lansing, Oct. 13-15. Sec., Dr. F. C. Warnshuis, 1019 Maccabee Bldg., Detroit.

MINNESOTA: Minneapolis, Oct. 20-22. Sec., Dr. E. J. Engberg, 524 Lowry Bldg., St. Paul.

NEVADA: Carson City, Nov. 2-4. Sec., Dr. Edward E. Hamer, Carson City.

NEW JERSEY: Trenton, Oct. 20-21. Sec., Dr. James J. McGuire, 1101 Trenton Trust Bldg., Trenton.

NEW MEXICO: Santa Fe, Oct. 12-13. Sec., Dr. P. G. Cornish, Jr., 221 W. Central Ave., Albuquerque.

SOUTH CAROLINA: Columbia, Nov. 10. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

TEXAS: Fort Worth, Nov. 17-19. Sec., Dr. T. J. Crowe, 918-19 Mercantile Bank Bldg., Dallas.

WEST VIRGINIA: Morgantown, Nov. 19-21. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: *Reciprocity.* Milwaukee, Oct. 21. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

Wyoming June Report

Dr. W. H. Hassed, secretary, Wyoming State Board of Medical Examiners, reports 6 candidates licensed by reciprocity with other states at a meeting held at Cheyenne, June 2, 1931. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1911)	Montana
University of Kansas School of Medicine		(1930)	Kansas
University of Michigan Medical School		(1928)	Michigan
St. Louis University School of Medicine		(1928)	California
University of Nebraska College of Medicine		(1925)	Nebraska
Osteopath*			Missouri

* Licensed to practice osteopathy and surgery.

Louisiana June Report

Dr. Roy B. Harrison, secretary, Louisiana State Board of Medical Examiners, reports the written and practical examination held at New Orleans, June 10-12, 1931. The examination covered 12 subjects and included 100 questions. An average of 75 per cent was required to pass. Sixty-eight candidates were examined, all of whom passed. Five physicians were licensed by reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School		(1931)*	88.3
University of Illinois College of Medicine		(1931)	86.6
Tulane University of Louisiana School of Medicine		(1930)	89.9, (1931) 82.4, 84.3, 84.6, 84.8, 84.9, 85.2, 85.6, 85.6, 85.7, 86, 86.4, 86.7, 86.8, 87.1, 87.2, 87.3, 87.3, 87.4, 87.5, 87.7, 87.8, 87.8, 88, 88, 88.1, 88.1, 88.2, 88.2, 88.2, 88.3, 88.3, 88.4, 88.5, 88.6, 88.6, 88.7, 88.7, 88.8, 88.9, 89, 89.1, 89.2, 89.3, 89.3, 89.4, 89.5, 89.5, 90.2, 90.6, 90.6, 90.7, 90.8, 90.8, 91, 91, 91.5
Johns Hopkins University School of Medicine		(1928)	89.1
University of Nebraska College of Medicine		(1930)	87.5
Meharry Medical College		(1917)	89
Meharry Medical Department of Walden University		(1914)	82.1
Memphis Hospital Medical College		(1912)	69.5†
University of Tennessee College of Med.		(1929)	88.6, (1930) 87.6
University of Virginia Department of Medicine		(1930)	89.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Emory University School of Medicine		(1927)	Georgia
Jefferson Medical College of Philadelphia		(1917)	Penna.
University of Tennessee College of Medicine		(1914)	Mississippi
University of Texas School of Medicine		(1916), (1928)	Texas

* This applicant received his M.B. degree and will receive his M.D. degree on completion of one year's internship in a hospital.

† Credit given for over fifteen years of practice made his average passing.

Book Notices

HYPERTENSION AND NEPHRITIS. By Arthur M. Fishberg, M.D., Associate Physician to Beth Israel Hospital, New York City. Second edition. Cloth. Price, $6.50. Pp. 619, with 39 illustrations. Philadelphia: Lea & Febiger, 1931.

In this edition the author has rewritten several sections and added to others. He uses the term hypertensive retinopathy instead of albuminuric retinitis, although he suggested this change in the former edition, mentions the work of Larson on the papilla with the Gullstrand ophthalmoscope, describes the signs of retinal arteriosclerosis, and discusses the occurrence of choked disk due to edema of the brain. The work of Poulton and Ryffil on the increase of hydrogen ion concentration in uremia and a study of acid base equilibrium is mentioned. He still feels that the simple specific gravity test for renal function is the best and doubts whether the urea clearance test or the determination of the Addis ratio are superior to it. In the chapter on edema appear the references to Landis's method of testing for capillary pressure, the methods of determination of total and individual protein fraction in the plasma, and some work on the colloid properties of albumin. Allergy in relation to glomerulonephritis, while just mentioned in the first edition, is here discussed at length. The recent work of Hering on the carotid sinus and the group of nerves called blood pressure restrainers is covered efficiently. The work of Hoover and Wassermann in relation to the effect of a reduced blood supply to the brain as a cause of cardiac asthma has been added to the chapter on cardiac failure in hypertension. Paroxysmal hypertension as a result of suprarenal ganglioma and renal osteodystrophy are two new additions. Some sections have been rearranged, many pages have been added, and some new illustrations appear in this edition. The praise given the former edition holds for the present one. The changes and additions have made it still more valuable.

HANDBUCH DER INNEREN SEKRETION: EINE UMFASSENDE DARSTELLUNG DER ANATOMIE, PHYSIOLOGIE UND PATHOLOGIE DER ENDOKRINEN DRÜSEN. Herausgegeben von Dr. Max Hirsch. Band II, Lieferung 9. Paper. Price, 28 marks. Pp. 1745-2016, with 47 illustrations. Leipzig: Curt Kabitzsch, 1931.

The last twenty-nine pages of this section of the larger work contains a chapter on the influence of the endocrines on human growth and body form by Dr. H. Rautmann in Brunswick. This chapter deals in an elementary way with the influence of the anterior hypophysis, the thyroids and the gonads in body growth in man. The majority of this chapter has already been presented in the sections on these specific endocrine glands. But by far the most important part of this volume is the chapter on senescence and rejuvenation, by Dr. B. Romeis in Munich. This chapter makes a monograph of 250 pages with 47 illustrations and reviews in critical detail the experimental and clinical data of the various attempts at general body and sex function rejuvenation in old animals and old persons. The presentation is logical, lucid and objective. The analysis appears everywhere to be fair. The author does not throw out every possibility of action solely on account of the enthusiasm and lack of judgment, if not downright charlatanism, of many workers in this field. The results of ovarian and testis transplants, roentgen action on ovaries and testes, and attempts at restoring testes and ovarian functions in the aged is adequately presented. The author concludes, in summarizing the entire literature, that the early hopes and expectations from rejuvenation measures on endocrine basis have come to grief, in the main; that rejuvenation cannot as yet be spoken of in the strict sense of this word as a possibility in mammals.

EXPERIMENTS ON THE ETIOLOGY OF THE INFLUENZA EPIDEMIC OF 1928-1929. By I. S. Falk, R. W. Harrison, R. A. McKinney and G. W. Stuppy. American Journal of Hygiene, Monographic Series, No. 11. Paper. Pp. 192, with 66 illustrations. Baltimore: American Journal of Hygiene, 1931.

This is another attempt to establish a possible relationship between a particular group of bacteria and influenza. The authors' conclusions are recorded in thirty-eight items in the summary. In brief, it is asserted that material transferred from human cases of "influenza" has produced an influenza-like disease in monkeys; that pure cultures of Pfeiffer's bacillus and *B. pneumosintes* will not produce such a condition; that an acute infection of the upper respiratory tract resembling influenza has been induced by the use of cultures of a pleomorphic "hemophilic" streptococcus isolated from the blood of a human case of "influenza"; that "rough" colonies of this organism are more virulent than "smooth" colonies; and, finally, that the pleomorphic streptococci studied were "not improbably . . . etiologically related to the influenza outbreak in Chicago in the winter of 1928-1929." Proper evaluation of the experimental data is difficult, partly because of the enormous amount of material and partly on account of the somewhat ponderous method of presentation. The experimental animal work was done largely with one culture isolated from the blood stream of one person who may have had influenza. The clinical records are not entirely clear on this point. The micro-organism is described as a pleomorphic "hemophilic" streptococcus producing a green zone on blood agar and having certain biochemical characteristics. The term "hemophilic" is unfortunate since lack of ability to grow on "plain agar plates" is hardly a proper criterion of hemophilic characteristics. Those who have worked with so-called green producing streptococci are well aware of the difficulties involved in grouping strains of these organisms on morphologic and biochemical grounds. One is reluctant to believe that the authors have encountered a new "group."

The bacteriologic work reported is unconvincing. Pfeiffer's bacilli were never encountered. This is, perhaps, not so surprising as the authors' failure even to mention hemolytic streptococci, which are so frequently present in infections of the respiratory tract, particularly during the winter months. The authors state that the selection of a culture for study was made on the basis of its source, "chiefly with respect to its estimated virus-containing potential," an expression which might have been further elucidated in place of some of the quite unnecessary detailed tabulations of biochemical data. The authors admit that the data obtained from agglutination tests may be open to question. It is asserted that there is a progressive increase in agglutinin titer against one of the two test organisms, with increased severity of colds or influenza or both. If the group (recorded in a previous table) the members of which confessed to neither colds nor influenza had been included, this statement could hardly be made.

Twenty-six series of animal experiments were made, chiefly on monkeys. Material for inoculation was obtained from the throat or blood of patients with a clinical diagnosis of influenza, from infected monkeys and from a variety of culture material. The elimination of Pfeiffer's bacillus and *B. pneumosintes* as possible causes of influenza on the basis of the data presented is unwarranted. The criteria used for production of "influenza-like" disease in monkeys included apparent illness, fever and prostration, infection of the respiratory tract, sometimes confirmed by necropsy, and an initial leukocytosis followed by a leukopenia with relative increase in lymphocytes. There is an unfortunate dearth of suitable controls, particularly in the attempts to produce infection with material taken directly from influenza patients. While it may have been impossible to carry on such control experiments at the time of the influenza outbreak, there is no excuse for not repeating these tests at a time when apparently normal persons were available.

There seems to be no doubt that some disease of the upper respiratory tract followed introduction of material from various sources. Whether an "influenza-like" disease was produced may be seriously questioned. Much is made of the blood picture. Unfortunately, two control monkeys, for which exact data are given, showed the same initial leukocytosis as the "infected" animals. Furthermore, since control animals showed a variation in total white blood cell count over the period of observation between 10,000 and 30,000, some difficulty might have been experienced in interpreting the counts of the inoculated ones. In most instances the exact blood cell counts are not given but merely the authors' interpretation. The use of animals a second time is not good experimentation, although it may be economical.

As a study of the cultural characteristics of a number of strains of pleomorphic streptococci and the pathogenicity of two of them, this work has merit; but as a serious contribution to the etiology of influenza, it is utterly unconvincing.

RÖNTGENATLAS DER LUNGENERKRANKUNGEN: EIN LEITFADEN FÜR ÄRZTE. Von Dr. W. Brednow, Privatdozent für innere Medizin und Röntgenologie an der Universität Göttingen, und Dr. E. Hofmann. Paper. Price, 12 marks. Pp. 166, with 86 illustrations. Berlin: Urban & Schwarzenberg, 1931.

The different diseases of the lungs are fully presented by means of a complete collection of roentgenograms. An appended analysis of these pictures gives the reader a clear understanding of the details and renders him capable of making a correct diagnosis by himself. It may be agreed that roentgenology reaches its acme when the closest cooperation is exercised with the clinician. Only when the clinical picture is considered will the roentgen examination prove beneficial to the patient. On the other hand, the roentgen diagnosis should be independent as far as possible, in the same way as histologic or other laboratory work. If these self evident facts are remembered, the incorrect diagnosis of roentgenograms will be avoided. This will often spare the patient harmful results. The authors present first the appearance of the normal and then of the tuberculous and the nontuberculous lung. Beginning with incipient tuberculosis they continue with the valuable and well collected forms of the different early infiltrations. The inflammatory diseases of the lungs, tumors and pleuritic disorders are excellently portrayed and described. The purpose of the book is a purely practical and didactic one, and for the rich contents, its careful editing, excellent picture material and clear and complete description it deserves a thorough acquaintance among practicing physicians as a roentgenologic adviser.

GENERAL CHEMISTRY. By H. I. Schlesinger, Professor of Chemistry, the University of Chicago. Second edition. Fabrikoid. Price, $4. Pp. 847, with 48 illustrations. New York: Longmans, Green & Company, 1930.

Textbooks on general chemistry whose main theme is to describe specific reactions and substances should be given some descriptive name, such as "A Compendium of Compounds." In contradistinction, modern works on general chemistry give the general principles underlying chemical reactions, using specific reactions and substances as examples, thus supplementing the knowledge of principles with a knowledge of chemical substances. This volume can be placed in the latter class. It is readable and logically arranged. Judging from the quiz outlines, the problems suggested, the references for collateral reading, the historical sections and a paragraph in the introduction and review entitled "Notes on the Method of Study," the author is a pedagogue true to the best traditions. One slight inaccuracy of medical interest is noted; in a chapter on carbon compounds appears a statement that a lack of vitamin A causes rickets. On the whole, the book is one of the milestones in textbooks on chemistry. It should be destined to do as much to advance the teaching and applications of the subject in America today as did its forerunners of a score of years ago from the same university, Smith's "College Chemistry" and Stieglitz's "Theory of Qualitative Analysis."

THE PHYSICAL AND RADIOLOGICAL EXAMINATION OF THE LUNGS WITH SPECIAL REFERENCE TO TUBERCULOSIS AND SILICOSIS, INCLUDING A CHAPTER ON LARYNGEAL TUBERCULOSIS. By James Crocket, M.D., D.P.H., F.R.C.P.E., Lecturer on Tuberculosis, Glasgow University. Second edition Cloth. Price, 16/– net. Pp. 296, with 151 illustrations. London: H. K. Lewis & Company, Ltd., 1931.

This compact volume covers the examination of the lungs by the usual physical and roentgen methods in a most satisfactory manner. The subject matter is concentrated, exhaustive, well written and profusely illustrated. In these days, in which there is a tendency to supplant the older methods of palpation, percussion and auscultation by fluoroscopy and roentgenograms, it is satisfying to note that the importance of the former is stressed while the value of the latter is fully recognized. Technical

details concerning palpation, percussion and auscultation as presented should prove of interest and value not only to the student but also to the tried practitioner in this field, who has given the subject much thought and has had the opportunity of checking on his own observations through the process of trial and error. Many well chosen reproductions of roentgenograms of the chest, covering a wide range of pathology, are included. A careful examination of these and a study of the author's comments should prove of interest and value to any one interested in this field. The chapters on silicosis, bronchography and the examination of the larynx in pulmonary tuberculosis add greatly to the value of the work. In the glossary many terms loosely employed and the names of signs rarely used and readily forgotten are concisely defined. These should prove of value to the internist.

QUANTITATIVE CLINICAL CHEMISTRY: VOLUME I: INTERPRETATIONS. By John P. Peters, M.D., M.A., Professor of Internal Medicine, Yale University School of Medicine, and Donald D. Van Slyke, Ph.D., Sc.D. Cloth. Price, $12. Pp. 1264, with 124 illustrations. Baltimore: Williams & Wilkins Company, 1931.

One of the more pleasing aspects of the state of science in this country is the appearance of monographs on broad fields of science by distinguished reviewers. For a long time German writers have been especially adept in this field of compilation. Many of the earlier advances in many fields were recorded in that language. In the past decade, however, the scientific literature in the English language has been mounting at an increasing rate. The appearance of this volume helps to summarize for English readers the vast amount of information in the related fields of medicine and biochemistry in a pleasingly critical manner and sets the standard for books of this class. It is the first in a series of two on quantitative clinical chemistry. It is the work of two prominent students in closely related fields and is worthy of their reputations. The large amount of information found in the rapidly accumulating pages of biochemistry has been summarized. The information is presented in a form useful for physicians, biochemists, teachers, chemists, home economics workers and others interested in the application of the quantitative data of the chemistry of biology. The whole field is treated thoroughly and broadly. Each of the elements, compounds or groups entering in these related fields is traced historically from its first appearance as an important factor and the chemistry and physiology is discussed quite thoroughly. There are chapters on total metabolism; carbohydrates; lipoids; nonprotein nitrogen and nitrogen metabolism; urea; ammonia; amino-acids; uric acid; creatine and creatinine; total organic acids, lactic acid and ketones; phenols; hemoglobin; proteins of the blood plasma, urine and other body fluids; volume of the circulating blood; total base, sodium and potassium; calcium; magnesium; carbonic acid and acid-base balance; chlorides; phosphorus, and sulphur. The bibliography carries approximately 4,000 references, which covers almost all the important work on the subject. An excellent subject index is included. No doubt, in a work of more than 1,200 pages, errors may have crept in; but the errors, either of fact or of interpretation, have been kept to a minimum. It is hoped that, in succeeding revisions of the work, these errors will have been brought to the attention of the author. Of the 4,000 references there can be no doubt that some will prove to be erroneous or misleading. The authors point out that some of the statements must be accepted with caution, and where further investigation is desirable, it is pointed out. It is regrettable to note the absence of chapters on the chemistry of the body fluids or tissues, which would serve to orient the reader. On the other hand, it might be questioned whether such material belongs in a book on the clinical application of biochemistry. The oxidation of fat in the body has been the subject of many reports, and because of its importance to the clinical application of acidosis, if treated at all, it should be treated in more detail. This monograph will take its place as the leading reference work for a summary of the information that has been published on the subject. It is written in an interesting and clear style. Of especial interest to physicians whose biochemical training has been limited are several introductory paragraphs to physical chemistry notations. The appearance of the companion volume, on laboratory methods, is awaited with interest.

ENCEPHALITIS POST VACCINATIONEM: EXPERIMENTELLE STUDIE. Von Dr. J. R. F. Rassers, Konservator am bakteriologisch-hygieneischen Laboratorium der Reichs-Universität Leiden. Paper. Price, 360 florins. Pp. 92, with 30 illustrations. Leiden: S. C. Van Doesburgh; Leipzig: Johann Ambrosius Barth, 1931.

The burden of this monograph is to establish that postvaccinial encephalitis is due to the excessive use of sodium chloride in the diet. The author was led to consider the diet in seeking to explain that postvaccinial encephalitis is not nearly so frequent in the first year of life as later: The change in the diet at about the end of the first year undoubtedly may bring with it an increased consumption of sodium chloride. He then considered the relation of sodium chloride to the skin and found that in dogs sodium chloride crowds out calcium from the skin; further, that in dogs fed with food rich in sodium chloride the vaccine virus may give rise to severe cutaneous reactions as well as to symptoms and structural changes resembling those of postvaccinial encephalitis. But how explain the fact that postvaccinial encephalitis appears to be of recent origin? May it not be possible that the vaccinia virus is becoming more virulent as the result of an increase of sodium chloride in the fodder of calves? The author has been unable to make any experiments to test his second hypothesis and urges that experiments be made to determine the effect of sodium chloride in the feed of vaccinated calves on the virulence of the virus. In the meantime, until the results of such experiments may be obtained, he would urge that vaccine virus be propagated in calves whose skin contains calcium. The theoretical considerations, often rather finely spun, and the experiments referred to in the foregoing are presented clearly and interestingly. The book will interest students and investigators of postvaccinial encephalitis.

ACCIDENTAL INJURIES: THE MEDICO-LEGAL ASPECTS OF WORKMEN'S COMPENSATION AND PUBLIC LIABILITY. By Henry H. Kessler, A.B., M.D., F.A.C.S., Medical Director, New Jersey Rehabilitation Clinic. Cloth. Price, $10. Pp. 718, with 157 illustrations. Philadelphia: Lea & Febiger, 1931.

The author clearly states the purpose of this book in his preface as, primarily, the discussion of the medical questions which arise in the litigation of accident claims. The need for the volume is obvious when one reviews the existing textbooks. The foreword by Fred H. Albee is complimentary to the author and to the excellent manner in which this difficult field is covered. The background of the book is based on the personal examination of more than 63,000 cases by the New Jersey Compensation Bureau, supplemented by the findings of foreign experts after half a century of experience in the administration of compensation laws. Almost all medical men are more or less called on to decide accident litigation problems for their patients. This book determines the relations between injury and disease and the probable period of disability. The subject matter is developed in a clear manner and written with an easy style. The first chapters consider the historical background of compensation principles and then consider the medical aspects of the workmen's compensation laws. The remainder of the book takes up, methodically, injuries to different parts of the body by discussing the usual causes, physiology, the common pathologic findings and the phase of compensation adjustment. The chapter on traumatic neuroses deserves special comment and, more especially, the discussion of malingerers.

HANDBUCH DER THEORETISCHEN UND KLINISCHEN (ALLGEMEINEN UND SPEZIELLEN) RÖNTGENKUNDE. Herausgegeben von Guido Holzknecht. Band III: Röntgenuntersuchung und Strahlenbehandlung der Speiseröhre. Von Dr. Josef Palugyay, Privatdozent für medizinische Röntgenologie, Universitätsklinik in Wien. Paper. Price, 56 marks. Pp. 391, with 224 illustrations. Vienna: Julius Springer, 1931.

This volume is the third of the well known "Handbook of Roentgenology" published by Holzknecht. The author speaks of this subject as the result of twelve years of intensive experience in this special field in the second surgical university clinic of Vienna. Following a brief historical chapter, the anatomy of the esophagus and the physiology of the act of swallowing are discussed. The technic of visualization of the esophagus is described with particular reference to the distal end, which is often difficult to demonstrate. The author resorts in some cases to horizontal and oblique positions in addition to the customary vertical position, which, of course, is the one furnishing most information. Schematic drawings serve to demonstrate the

anatomic relation of the structures involved, with reference to optimal filming results. Throughout the entire volume there are found film reproductions visualizing the pathologic conditions discussed under the various headings. The author treats the subject with great thoroughness, and a better source of information would be difficult to find. Of unusual interest is a chapter on operative procedures on the esophagus with reference to the results of subsequent roentgen examinations. The final chapter is devoted to the various forms of therapy in malignant cases.

RECENT ADVANCES IN THE STUDY OF THE PSYCHONEUROSES. By Millais Culpin, M.D., F.R.C.S., Lecturer in Psychoneuroses at the London Hospital Medical College, and in Medico-Industrial Psychology at the London School of Hygiene and Tropical Medicine. Cloth. Price, $3.50. Pp. 348, with 4 illustrations. Philadelphia: P. Blakiston's Son & Company, Inc., 1931.

This book lives up to its title. It gives a lucid and clean-cut description of the recent theories regarding the diagnosis and treatment of the psychoneuroses. The author, evidently an ardent freudian, has restricted himself to this part of the presentation, wisely leaving the explanation of the psychology of Adler and Jung, and the discussion of the psychopathology of childhood, to his collaborators, A. R. Redfern, James C. Young and Emanuel Miller. The first part, written by Culpin, gives a summary of the work done by the freudians to date. This summary is excellent because it leads the supposedly ignorant reader step by step into the ways of psychologic thinking and deductions. The author's proposed classification of the neuroses is less lucid and does not correspond to the generally accepted ideas of the subject. He even proposes to discontinue the use of the term "neurasthenia" entirely, without offering a good substitute for this concept. Here he is probably propelled by his ultrafreudian attitude. Since the author is evidently more interested in hysteria, war neuroses, and occupational neuroses, than in obsessional anxiety states, his chapters on these diseases are by far the most complete. He devotes little space to methods of treatment by means of psychotherapy or psychoanalysis. It would have been interesting to read a brief summary of the technic employed in treatment. Perhaps this would have been more important than the rather lengthy discussion of telegraphers' cramp and miners' nystagmus. The first disease is on the wane because the Morse code is no longer being used, and the latter is a neurosis local to England. The chapter on Adler, by Redfern, gives a brief presentation of the views of this school. It is a clear and concise summary of the subject. The presentation of Jung's views, by Young, is less clear, but this is probably due to the inherent difficulty of describing Jung's theories. The description of the psychopathology of childhood, by Miller, is decidedly sketchy and the chapter on psychotherapeutic clinics by J. R. Reese could have been omitted entirely without lessening the value of the volume. All in all, this book can serve as an excellent introduction to modern psychoanalytic and psychotherapeutic concepts.

THE RATIONAL TREATMENT OF VARICOSE VEINS AND VARICOCELE, WITH NOTES ON THE APPLICATION OF THE OBLITERATIVE METHOD OF TREATMENT TO OTHER CONDITIONS. By W. Turner Warwick, M.A., M.B., F.R.C.S., Surgeon to Outpatients and Surgeon in Charge of the Rectal Department, the Middlesex Hospital. Cloth. Price, 5/-. Pp. 188, with 12 illustrations. London: Faber & Faber, Ltd., 1931.

The injection treatment of varicose veins is now widely practiced by the general practitioner, but the scope and limitations of this method and the reasons for the occasional failure and early recurrence have not been thoroughly understood. The intimate knowledge of the venous return has been greatly enhanced by the author's work on normal cadavers. While the incompetence of the saphenous valves and the valves of the perforating veins has been well known, the demonstration of valvular defects in the deep veins is an important contribution to the better understanding of certain types of this disease. It would seem from this work that tests should be devised not so much for patency but for valvular incompetence of the deep veins. The remaining part of the work is a concise presentation of the technic of injections, with some notes on the treatment of hemorrhoids, varicocele and cysts with endothelial lining. The consistent misspelling of Trendelenburg's name is the only disturbing point in this important contribution to the functional pathology of varicose veins.

Medicolegal

Wealth of Patient and Physicians' Fees

(Houda v. McDonald (Wash.), 294 P. 249)

For several years Mrs. McDonald had been seriously afflicted with goiter. She had had much treatment, including a surgical operation. In the fall of 1928 she consulted the plaintiff, Dr. Houda, and after several months' treatment was operated on by him, apparently with satisfactory results. Mrs. McDonald and her husband owned community property worth $1,600,000, for the most part income-producing property. Dr. Houda had no express agreement with either the patient or her husband as to what he would charge for his services. The husband died in July, 1929, and thereafter Dr. Houda presented to Mrs. McDonald, his patient, who had been qualified as executrix of her husband's estate, a bill for $15,000. In fixing his charge, he took into consideration the wealth of his patient and her husband, the importance of the service to her and the skill required in rendering that service. As executrix, Mrs. McDonald refused to approve the bill for the amount stated but did approve it for $1,000. Dr. Houda thereupon instituted suit to recover the entire amount claimed. In the superior court for Pierce County a jury returned a verdict in his favor for $3,500, and judgment was rendered accordingly. Mrs. McDonald thereupon appealed to the Supreme Court of Washington.

The decision of the Supreme Court turned on the admissibility of evidence as to the wealth of the patient and her husband, for the purpose of proving the value of Dr. Houda's service. Evidence as to the wealth of Mr. and Mrs. McDonald and the testimony of three physicians proffered as witnesses by Dr. Houda were admitted over the objection of counsel for Mrs. McDonald. On behalf of Dr. Houda, a physician testified that it was the general practice of physicians and surgeons in the community and in the state of Washington to take into consideration the financial status of patients in determining the charge to be made for professional services. A bill for a major operation, said this witness, would represent about 10 per cent of the annual income of the person liable for payment. The fee demanded in the present case, $15,000, he thought was just. Another physician testified that it was the custom of physicians to fix their charges on the basis of the incomes of their patients; with some physicians it was the practice to charge a month's income for major operations, and others charged 10 per cent of the yearly income for such operations. This witness professed to be fairly familiar with the general practice throughout the United States and so far as he knew it is the universal custom to take into consideration the wealth of the patient in fixing charges for a physician's service. He regarded the fee demanded in this case as reasonable and proper. A third physician, appearing on behalf of Dr. Houda, concurred substantially in the testimony of the two preceding witnesses. Two physicians offered as witnesses on behalf of Mrs. McDonald agreed that it was customary for physicians to take into consideration the financial ability of patients to pay, in fixing the charges to be made for professional services. One testified that for an ordinary goiter operation and the ordinary treatment that precedes and follows such an operation, a charge of from $500 to $1,000 to a man reputed to be a millionaire would represent a large fee. The other physician testifying on behalf of Mrs. McDonald was of the opinion that the ordinary charge for goiter operations in the community was from $150 up. He himself applied the 10 per cent basis of charges with respect to most major operations, up to a certain limit. For services rendered by Dr. Houda he considered $1,000 a good fee.

These five physicians, said the Supreme Court, agreed that the wealth and income of a patient is customarily considered as an element controlling in some measure the reasonable amount of compensation a physician is entitled to for services of the nature involved in the present case. In this particular case, however, there were several estimates of the reasonable value of the services rendered, ranging from $500 to $15,000.

There seems to be a lack of harmony in the decisions of the courts concerning the admissibility of evidence of the pecuniary circumstances of the person liable for compensation for medical and surgical services rendered. We are of the opinion, said the court, that the rule best supported by reason—in any event as applicable to this case—is that in some substantial measure the reasonable compensation of a physician is determinable by the ability of the patient or her husband to pay for the service. The contract for the service was made by the physician directly with the patient who was to benefit by his services, including a major operation, and it was shown by competent evidence that it is customary among physicians to charge for such service in some measure according to the ability of the patient to pay. If wealth and income of a patient are admissible facts to be proved in a controversy of this nature, then the evidence of the wealth of the patient and her husband and the testimony of physicians were admissible to be considered by the jury and manifestly support the verdict and judgment awarded to Dr. Houda for recovery in the sum of $3,500. Judgment of the court below was affirmed.

Interpretation of Roentgenograms by Chiropractor

(Ness v. Yeomans (N. D.), 234 N. W. 75)

The plaintiff fractured the ulna of his right arm. The defendant, a physician, was employed to treat the injury. In this action, the plaintiff alleged that the fracture was not properly reduced and that proper after-treatment was not given. The jury rendered a verdict for the plaintiff and, after the trial court had denied a motion for a new trial, the defendant appealed to the Supreme Court of North Dakota.

The defendant contended, among other things, that the trial court erred in permitting a chiropractor to testify with respect to certain roentgenograms which he, the chiropractor, had taken of the plaintiff's arm. The witness testified that he had had six years' experience in roentgenography. There was no error, said the Supreme Court, in permitting the witness to testify. The fact that he was a chiropractor was a mere incident, except so far as it showed his knowledge and study of human anatomy. The names, number and position of the bones in the human body are the same, whether one is a regular physician or a chiropractor. It is not the school which he follows but his knowledge, experience and special training which qualifies a witness to testify. A chiropractor may testify as to matters in which he is qualified to speak so long as he does not attempt to testify in regard to a school of treatment separate and distinct from his own. If the witness has studied human anatomy so as to acquire special knowledge, if he knows how to take roentgenograms so as to give correct representations, if he knows how to read and interpret them, then he is qualified to testify.

While the evidence seemed to show, said the court, that a perfect union had not resulted, all the expert witnesses testified that the union was a good one and that the treatment given by the defendant-physician was proper treatment. The stiffness of muscles and the loss of motion, about which the plaintiff complained, could not be attributed, in the opinion of the witnesses, to any negligent treatment given by the defendant, but to the plaintiff's failure to follow instructions as to exercise of the arm and fingers. The defendant used a fluoroscope in reducing the fracture, but the plaintiff contended that the defendant should have made a roentgenogram of the arm after the fracture had been reduced to determine whether the bones were in apposition. Had such an examination been made, contended the plaintiff, the fact that one portion of the broken bone projected past the other would have been detected and could have been remedied. Even if this were so, said the court, all the expert testimony in the case showed a good union and that correct practice was followed. The contention here made by the plaintiff involved a question of good practice and on this question the expert testimony controls.

The defendant is not responsible for the result of his treatment, said the court, unless the result is caused by his negligence. There was nothing shown in the case which was not consistent with good practice; neither was there anything in good practice which the defendant did not do. The burden of proof is on the plaintiff to show that the proper method was not employed, that the proper treatment was not given, and that the physician violated some of the rules of good practice, so that the result complained of necessarily came from such violation. This the plaintiff failed to do. The Supreme Court, therefore, reversed the order of the trial court denying a new trial and remanded the case.

Evidence: Expert Testimony Invading Province of Jury.—An expert witness may not testify that the insured's death resulted from wounds self-inflicted with suicidal intent. Whether or not the death is suicidal is the point at issue and is a question which the jury was impaneled to decide. The expert may testify concerning the depth, character and consequences of the cuts and wounds, and the manner in which they might have been inflicted. When he has so testified, the jury, not the witness, should say with what intent the wounds were inflicted.—*Johnston v. Order of United Commercial Travelers of America (Ark.), 33 S. W. (2d) 375.*

Hospitals: Liability of Charitable Institution for Unlawful Retention of Dead Body.—An Ohio statute provides that a person, association or company having unlawful possession of the body of a deceased person shall be liable in a sum not less than $500 nor more than $5,000 to the personal representative of the deceased. The fact that a hospital, said the court of appeals of Ohio, Hamilton County, is a charitable institution does not relieve it from liability for a violation of this statute.—*Howard v. Children's Hospital of The Protestant Episcopal Church (Ohio), 174 N. E. 166.*

Evidence: Expert Opinion Based on Hypothetical Questions Evaluated.—We cannot, said the Supreme Court of Oregon, give to expert testimony based on hypothetical questions the same weight we do to the direct and positive testimony of a physician who treated the testator. The attending physician had a great advantage over the expert. He saw the testator, examined and conversed with her. He had every opportunity of observing her and would have discovered her mental incapacity if she had been mentally unsound.—*Richards v. De Lin (Ore.), 294 P. 600.*

Evidence: Admissibility of Death Certificates.—A Kentucky statute declaring that a properly certified copy of a death certificate shall be prima facie evidence in all courts of the facts therein stated is valid. It is error for a court to refuse to permit such a certificate to be read to the jury.—*Massachusetts Mut. Life Ins. Co. v. Bush (Ky.), 33 S. W. (2d) 351.*

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, St. Louis, Nov. 4-6. Dr. Louis J. Mitchell, 29 E. Madison Street, Chicago, Secretary.

American College of Surgeons, New York and Brooklyn, October 12-16. Dr. Franklin H. Martin, 40 East Erie St., Chicago, Director-General.

American Congress of Physical Therapy, Omaha, October 5-8. Dr. F. L. Wahrer, 22 South Center Street, Marshalltown, Iowa, Secretary.

American Society of Tropical Medicine, New Orleans, November 18-20. Dr. Benjamin Schwartz, P. O. Box 131, Pennsylvania Avenue Station, Washington, D. C., Secretary.

Associated Anesthetists of the United States and Canada, New York, October 12-16. Dr. F. H. McMechan, 770 Westlake Road, Avon Lake, Ohio, Secretary.

Delaware, Medical Society of, Wilmington, October 13-14. Dr. W. O. La Motte, Medical Arts Building, Wilmington, Secretary.

Interstate Postgraduate Medical Association of North America, Milwaukee, October 19-23. Dr. W. B. Peck, 12½ East Stephenson Street, Freeport, Ill., Managing Director.

Kansas City Southwest Clinical Society, Kansas City, Mo., October 5-10. Dr. Joseph E. Welker, 906 Grand Avenue, Kansas City, Mo., Secretary.

Oregon State Medical Society, Eugene, October 22-24. Dr. F. D. Stricker, Oregon Building, Portland, Secretary.

Pennsylvania, Medical Society of the State of, Scranton, October 5-8. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Southern Medical Association, New Orleans, November 18-20. Mr. C. P. Loranz, Empire Building, Birmingham, Alabama, Secretary.

Vermont State Medical Society, Rutland, October 8-9. Dr. William G. Ricker, 31 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Roanoke, October 6-8. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Western Branch of American Urological Association, San Francisco, Nov. 6-7. Dr. H. W. Howard, 193 Eleventh St., Portland, Ore., Sec'y.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

48: 261-500 (July) 1931

Origin of Archinephric Duct of Vertebrates. T. H. Burlend, Cardiff, Wales.—p. 261.

Innervation of Thyroid Gland: II. Origin and Course of Thyroid Nerves in Dog. J. F. Nonidez, Cornell, N. Y.—p. 299.

Sensory Unmyelinated Fibers in Spinal Nerves. S. W. Ranson and Helen K. Davenport, Chicago.—p. 331.

Contribution to Development of Pericardium. R. Elliott, Columbus, Ohio.—p. 355.

*Observations on a Cyclic Variation in Capacity of Anterior Hypophysis to Induce Ovulation in Rabbit. J. M. Wolfe, Nashville, Tenn.—p. 391.

Prozymogen Granules ("Vacuome") of R. R. Bensley in Pseudotriton Pancreas, and Modern Neutral-Red Cytology. J. B. Gatenby, Dublin, Ireland.—p. 421.

Cervical Part of Gangliated Cord, with Especial Reference to Its Connections with Spinal Nerves and Certain Cerebral Nerves. S. A. Siwe, Lund, Sweden.—p. 479.

Ovulation in the Rabbit.—Wolfe removed the anterior hypophysis from sows killed in the various periods of the estrous cycle. A suspension of the fresh tissue in physiologic solution of sodium chloride was injected intravenously into sexually mature female rabbits, in an attempt to induce ovulation. The following results were obtained: 1. An amount of the suspension representing 1 mg. of fresh tissue induced ovulation in the rabbit, when the anterior lobe was taken from an animal whose ovaries contained follicles measuring 6 or 7 mm. in diameter and degenerate corpora lutea. 2. Ten milligrams of anterior lobe tissue was necessary to induce ovulation when the donors were in heat. 3. Forty milligrams of anterior lobe tissue was required to induce ovulation regularly when the ovaries of the donors contained active corpora lutea. 4. Anterior lobe tissue taken from pregnant sows had a great variation in its capacity to induce ovulation. Considered as a whole, the data indicate that the anterior lobe of the pregnant animal has a decreased capacity to induce ovulation when compared with glands taken from nonpregnant donors killed in the proestrous period. It is suggested that the anterior lobe of the hypophysis in pregnant sows may undergo a cyclic variation in its hormonic output similar to that which occurs in the nonpregnant sow.

American Journal of Physiology, Baltimore

98: 1-179 (Aug.) 1931

Study of Certain Factors Concerned in Specific Dynamic Action of Amino-Acids Administered Intravenously and Comparison with Oral Administration. C. M. Wilhelmj, J. L. Bollman and F. C. Mann, Rochester, Minn.—p. 1.

Physiologic Responses and Immune Reactions to Extracts of Certain Intestinal Parasites. H. E. Essex, J. Markowitz and F. C. Mann, Rochester, Minn.—p. 18.

Changes in Basal Metabolic Rate Accompanying Condition State Induced by Morphine. Dorothy P. Gulliksen, Chicago.—p. 25.

Influence of Atropine and Pilocarpine on Thirst (Voluntary Ingestion of Water). Mary F. Montgomery, Chicago.—p. 35.

Restoration of Pancreatic Secretion by Peptone and Histamine. Margaret E. MacKay and S. G. Baxter, Montreal.—p. 42.

Studies in Decerebration: VI. Effect of Deafferentation on Decerebrate Rigidity. L. J. Pollock and L. Davis, Chicago.—p. 47.

Metabolism of Skeletal Muscle Undergoing Atrophy of Denervation. H. M. Hines, C. E. Lese and G. C. Knowlton, Iowa City.—p. 50.

Studies on Conditions of Activity in Endocrine Organs: XXVII. Question of Reflex Inhibitory Action of Vagus on Medulliadrenal Secretion. N. E. Freeman and R. A. Phillips, Boston.—p. 55.

Comparison of Effects of Acid-Base Changes on Respiratory Movements and Response of Muscle to Direct, Indirect and Reflex Stimulation. H. Gay, Ann Arbor, Mich.—p. 60.

Conditions Governing Removal of Protein Deposited in Subcutaneous Tissues of Dog. Madeleine E. Field and C. K. Drinker, Boston.—p. 66.

Colloid Osmotic Pressure of Dog Blood and Lymph. D. F. Loewen, Madeleine E. Field and C. K. Drinker, Boston.—p. 70.

Substitution of "Lecithin" for Raw Pancreas in Diet of Depancreatized Dog. J. M. Hershey and S. Soskin, Toronto.—p. 74.

Studies on Thyroglobulin: I. Digestibility of Thyroglobulin. B. O. Barnes, A. J. Carlson and A. M. Riskin, Chicago.—p. 86.

Cutaneous Respiration in Man: III. Permeability of Skin to Carbon Dioxide and Oxygen as Affected by Altering Their Tension in Air Surrounding Skin. L. A. Shaw and Anne C. Messer, Boston.—p. 93.

Excitability of Turtle Ventricle During Vagus Stimulation. W. E. Garrey and R. Ashman, Nashville, Tenn.—p. 102.

Excitability of Turtle Auricle During Vagus Stimulation. R. Ashman and W. E. Garrey, Nashville, Tenn.—p. 109.

Studies on Physiology of Reproduction in Birds: XXXI. Effects of Anterior Pituitary Hormones on Gonads and Other Organ Weights in Pigeon. O. Riddle and Irene Polhemus, Cold Spring Harbor, N. Y.—p. 121.

Does Hemophilic Blood Contain Excess of Anticoagulant? P. S. Evans, Jr., and W. H. Howell, Baltimore.—p. 131.

"Excess Respiratory Quotient" of Recovery Period Following Strenuous Muscular Exercise in Man. C. L. Gemmill, Baltimore.—p. 135.

Studies on Adrenal Cortex: IV. Further Observations on Preparation and Chemical Properties of Cortical Hormone. W. W. Swingle and J. J. Pfiffner, Princeton, N. J.—p. 144.

Activity of Isolated Uterus and Its Relation to Estrous Cycle in Albino Rat. E. P. Durrant and S. Rosenfeld, Columbus, Ohio.—p. 153.

Emotional Hypercholesterolemia. C. Lyons, Boston.—p. 156.

Studies in Cardiac Permeability. J. M. Ort, M. H. Power and J. Markowitz, Rochester, Minn.—p. 163.

Relationship Between Food and Water Intakes in Mice. F. C. Bing and L. B. Mendel, Cleveland.—p. 169.

American Journal of Public Health, New York

21: 843-976 (Aug.) 1931

The Infant Before, During and After Birth. R. A. Bolt, Cleveland.—p. 843.

Community Health Program as It Applies to Child of From One to Six Years. C. F. Wilinsky, Boston.—p. 851.

Present Status of Acidophilus Milk. W. D. Frost and T. H. Butterworth, Madison, Wis., and S. M. Farr, Genesee, Wis.—p. 862.

*Transformation of Intestinal Flora Through Feeding of Unfermented Acidophilus Milk. R. P. Myers, Baltimore.—p. 867.

Studies of Viability of L. Acidophilus in "Acidophilus Milk." W. L. Kulp, Storrs, Conn.—p. 873.

*Diphtheria Immunization by Three and Four Injections of Toxin-Antitoxin: Comparative Trend of Immunizing Process. V. K. Volk, Pontiac, Mich.—p. 884.

What Social Work Is Not. Eleanor E. Kelly, Boston.—p. 891.

Hygienic and Sanitary Features of Milk Production by Rotolactor Process. J. G. Hardenberg, Plainsboro, N. J.—p. 895.

Unfermented Acidophilus Milk.—Myers shows that the cells of *Bacillus acidophilus* which are suspended in unfermented acidophilus milk are susceptible of being implanted in the human intestinal tract. It appears, then, that the process of manufacture does not injure the viability of the organisms and that the most important consideration is the use of a strain of *B. acidophilus* which is adapted for growth in the intestine. In sixteen experiments on human subjects, successful implantation of *B. acidophilus*, as determined by the plate method, was obtained in each case. In twelve of the sixteen experiments a predominant *B. acidophilus* flora was obtained by the regular consumption of approximately 1 quart of unfermented acidophilus milk a day, no other modification of the ordinary diets of the subjects having been made.

Diphtheria Immunization.—Volk carried on studies among 1,282 children to ascertain the development of immunity against diphtheria. Group one, 336 children, received three injections of toxin-antitoxin and showed immunity after the first year in 64.4 per cent and after the second year in about 85 per cent. Group two, 946 children, received four injections of toxin-antitoxin and showed immunity after the first year in 74 per cent and after the second year in 92 per cent. Four injections of toxin-antitoxin do not produce any more untoward reaction than three and are not unpractical either in private practice or as a public health procedure in schools. The use of four injections appears to be a preferable method of toxin-antitoxin administration until diphtheria toxoid has been sufficiently tested to justify its use in either preschool children alone or in all groups and ages. The Schick test need not be given as a routine procedure at the end of the first year, if at all, after administration of four injections of toxin-antitoxin. Simplifying the procedure by the omission of the final Schick test would encourage the private physician to undertake the work of immunization. The time saved by the omission of the final Schick test would enable the health officer to reach a larger group of unprotected children. The Schick test would, of course,

remain an indispensable test in research work, preliminary testing, in times of unusual prevalence of diphtheria in communities or institutions where conditions are favorable for the spread of the disease, or where it is necessary to know the exact status of immunity at all times.

American Journal of Syphilis, St. Louis

15: 289-448 (July) 1931

Clinical Appraisal of Syphilophobia. R. L. Gilman, Philadelphia.—p. 295.
Bismuth Arsphenamine Sulphonate (Bismarsen) in Treatment of Tabes Dorsalis. S. B. Hadden and G. Wilson, Philadelphia.—p. 316.
*Antisyphilitic Action of Malarial Parasite in Other Than Central Nervous System Syphilis. C. C. Dennie, H. M. Gilkey and S. F. Pakula, Kansas City.—p. 320.
*Aplastic Anemia Occurring During Treatment of Syphilis with Arsphenamines. D. J. Stephens, Rochester, N. Y.—p. 333.
Paroxysmal Hemoglobinuria: Three Cases. F. Thurmon and D. Blain, Boston.—p. 350.
Neoarsphenamine Exfoliative Dermatitis with Gangrene of Lower Extremities: Case. F. Ronchese, Providence.—p. 368.
Association of Cancer and Syphilis as Determined by Positive Serology. G. H. Belote, Ann Arbor, Mich.—p. 372.
*Further Studies on Wassermann Reaction in Joint Fluid. D. H. Kling and J. Pincus, New York.—p. 376.
*Recent Developments in Serology of Syphilis. J. A. Kolmer, Philadelphia.—p. 383.
Reagin Content of Serum in Various Manifestations of Syphilis. S. C. Schwartz, Washington, D. C.—p. 387.
*Influence of Temperature on Kahn Test. R. S. Muckenfuss and Elsa Ebel, St. Louis.—p. 391.
*Study of Wassermann Reaction in Pregnancy and Early Infancy. F. A. Hemsath, New York.—p. 396.
Comparison of Kline and Wassermann Tests in Primary Syphilis. L. Chargin and T. Rosenthal, New York, with Remarks on Kline Test by J. Koopman, New York.—p. 405.

Antisyphilitic Action of Malarial Parasite.—Dennie and his associates show that the malaria parasite itself or through some of its secondary action is antagonistic to the presence of *Spirochaeta pallida* and to the reactions that are produced by it, and that its use in syphilitic individuals causes the actual disappearance of hyperplastic or destructive syphilitic lesions. They do not advocate as a superior remedy the use of therapeutic malaria in preference to the arsphenamines, mercury, bismuth or the iodides. In early acute interstitial keratitis, malaria therapy seemingly caused rapid disappearance of lacrimation, photophobia and circumciliary injection and produced rapid clearing of haziness of the cornea. In old cases of chronic interstitial keratitis in which connective tissue is present in the cornea, no benefit would be obtained in the use of malaria. The haziness would remain unchanged. In hyperplastic bone syphilis the action of malarial therapy was apparently decided. The superimposed bone disappeared quickly. In cases of periarticular infiltration of the knee joint the hyperplastic tissue disappeared and function was restored. In resistant malignant skin syphilis in which all other methods had failed, a remarkable recovery was secured in a short time. Malaria does not as a rule change a persistently positive blood Wassermann reaction to a negative one. This fact has been observed in both congenital and acquired syphilis. In two cases of resistant skin syphilis in which the lesions disappeared with malarial therapy, a slow recurrence of the skin manifestation became apparent in a few weeks. The authors believe that malaria does not produce a clinical cure in any case of syphilis but so raises the natural immunity forces of the body against the disease that the affected individual can combat his infection better after having malarial inoculation. The response to subsequent antisyphilitic remedies was better than it was before malaria was given. They therefore strongly advise that all persons with resistant or refractory syphilis, whether they are affected with the somatic or the central nervous system type, be given the advantage of subsequent antisyphilitic treatment.

Aplastic Anemia Occurring During Treatment of Syphilis.—According to Stephens, the development of bone marrow depression is an infrequent but serious complication of the treatment of syphilis with the arsphenamines. The clinical manifestations of the disease depend on the extent of injury and the particular element or elements of the marrow affected. The occurrence of this condition seems to bear no relation to the number of injections or the total amount of the drug received; of the various arsphenamine preparations, neoarsphenamine is apparently the most frequent offender. Two cases of aplastic anemia developing during treatment with the arsphenamines are described. The bone marrow of one of the patients showed evidence of beginning active regeneration of marrow cells. Bone marrow depression following the arsphenamines is probably due to the toxic action of the drug or its closely allied derivatives on the marrow of a susceptible individual rather than to the action of either the arsenic or the benzene radical of the molecule.

Wassermann Reaction in Joint Fluid.—Kling and Pincus carried out the Wassermann reaction in a series of 150 cases of chronic and of acute arthritis. It was found to be positive in fifteen cases and negative in 134. The observation of a strict technic is reemphasized. The presence of other infections does not interfere markedly with the Wassermann reaction in the joint fluids. The reaction was found to run parallel in the joint fluid and in the blood. Contrary to the opinion of other investigators, the authors believe that the reaction by itself does not prove the syphilitic nature of a given case of arthritis. This is accomplished by excluding first other possible etiologic factors through a complete study of the joint fluid, by clinical symptoms, roentgen changes and particularly by the therapeutic test of the effect of the antisyphilitic treatment. A practical application of the test is the detection of syphilitic persons with otherwise negative signs. For this reason the Wassermann reaction should be carried out as a routine procedure in every aspirated joint effusion.

Developments in Serology of Syphilis.—Kolmer believes that, despite technical improvements of the past several years resulting in an increased sensitiveness of serum tests, all complement-fixation and flocculation procedures are still capable of yielding falsely negative reactions and especially in some cases of extremely latent syphilis with especial reference to late congenital or prenatal syphilis of children and syphilis of childbearing women. There is still room for a further increase of sensitiveness; but this is to be carried only so far as is consistent with specificity, since it is a simple matter to make the highly regrettable mistake of increasing sensitiveness to the point at which falsely positive reactions occur. It is better to fail in the diagnosis of an occasional case of syphilis than to run unnecessary risks of making a false diagnosis. The basis of this thought and practice is the fact that the serum tests for syphilis should possess only the maximum of sensitiveness consistent with specificity. And with this in mind simplicity of technic along with economy of time and materials should be regarded as of secondary importance only. The general result is that the serum diagnosis of syphilis and the dependence on serologic tests as guides in treatment are best served at present by two or more procedures, one of which should be a Wassermann test of proved sensitiveness and reliability.

Influence of Temperature on Kahn Test.—Muckenfuss and Ebel state that, although the number of positive serums in their series is small, the incidence of reactions intensified as the temperature was raised seemed great enough to justify the conclusion that in general the reaction is intensified as the temperature is elevated. In most instances an increase in degree of a positive reaction was the change observed, but from 5 to 7 per cent of the serums which gave negative reactions at room temperature were positive to some extent if incubated at 37 C. for ten to fifteen minutes before shaking. Most of the serums used were from patients under treatment for syphilis, so that a study of the clinical histories yielded no significant information concerning the effect of changing the temperature on the diagnostic value of the test. There was, however, no evidence that increasing the temperature resulted in the appearance of false positive reactions. In a small number of instances the reaction was diminished as the temperature was increased. Examination of the clinical records of these patients showed most of them to come from known cases of syphilis, and one which changed from plus-minus to negative came from a patient who had had repeated negative serologic tests. The test, as standardized by Kahn, is ordinarily run at a room temperature of from 21 to 24 C. The fluctuations in laboratory temperature during some seasons of the year may be considerably greater than this, so that, if results are to be compared from time to time, the sensitiveness of the reaction will vary unless a constant temperature is used. Since the higher temperature is the more sensitive, it

seems advisable to suggest that a short incubation period at 37 C. before shaking should be used as a routine.

Wassermann Reaction in Pregnancy.—Hemsath gives the results of the Wassermann test (New York State methods) on 6,800 admissions during twenty-one months at the New York Lying-In Hospital. The incidence of fixations was calculated from the results of tests on 4,500 pregnant women admitted to the antepartum clinics during one year. Thirteen per cent were Negroes. One hundred and seventy-nine cases showed marked fixation (two plus or stronger) with one or both antigens, an incidence of 4 per cent. The incidence was 2.5 per cent for the white patients and 12 per cent for the Negro. Two cases per thousand showed anticomplementary reactions. In 80 per cent of the positive cases, two or more specimens of blood were tested. The only instance of spontaneous change to a negative reaction following delivery among 140 positive cases which were retested on the seventh day post partum occurred in a case which had shown fixation only with noncholesterolized antigens. No evidence was found to justify the conclusion that a positive Wassermann reaction, confirmed by repeated tests, should be subject to any different interpretation in pregnant than in nonpregnant women.

Annals of Internal Medicine, Ann Arbor, Mich.

5: 95-246 (Aug.) 1931

Chronic Nonvalvular Cardiac Disease or Chronic Myocardial Insufficiency and Its Therapeutic Management. H. A. Christian, Boston.—p. 95.
Circulatory Adjustments in Heart Disease: A Concept of Circulatory Failure. Soma Weiss, Boston.—p. 100.
Dissecting Aneurysms of Aorta, Including Traumatic Type: Three Cases. P. C. Samson, Chicago.—p. 117.
Clinical and Experimental Observations on Treatment of Pernicious Anemia with Desiccated Stomach and with Liver Extract. C. C. Sturgis and R. Isaacs, Ann Arbor.—p. 131.
Adequate Treatment of Anemia. G. R. Minot and W. B. Castle, Boston. —p. 159.
Complement Fixation in Diagnosis of Amebiasis. C. F. Craig, Washington, D. C.—p. 170.
Pathologic Classification of Goiter and Its Clinical Significance. W. C. MacCarty, Rochester, Minn.—p. 178.
Heart in Hyperthyroidism. H. M. Thomas, Jr., Baltimore.—p. 184.
Medical Aspects of Peptic Ulcer. A. F. R. Andresen, Brooklyn.—p. 192.
Malignant Melanoma with Delayed Metastatic Growths. D. L. Wilbur and H. R. Hartman, Rochester, Minn.—p. 201.
The Hospital: Its Relation to Community and to Medical Profession. W. H. Smith, Baltimore.—p. 212.
The Profession and the Public. G. E. Follansbee, Cleveland.—p. 224.

Archives of Internal Medicine, Chicago

48: 1-170 (July) 1931

Experimental Nephrotic Edema. L. Leiter, Chicago.—p. 1.
*Is Poliomyelitis a Disease of Lymphatic System? M. T. Burrows, Pasadena, Calif.—p. 33.
*Experimental Edema. S. A. Shelburne, Dallas, Texas, and W. C. Egloff, Boston.—p. 51.
*Insulin: Some Effects on Normal Rabbits Protected from Hypoglycemia by Ingestion of Dextrose. R. F. Loeb, Emily G. Nichols and Beryl H. Paige, New York.—p. 70.
*Acute Toxic Hepatitis (Acute Yellow Atrophy) Due to Cinchophen: Case. K. K. Sherwood, Redmond, Wash., and H. H. Sherwood, Kirkland, Wash.—p. 82.
*Essential Hypertension: Diastolic Blood Pressure: Its Variability. D. Ayman, Boston.—p. 89.
*Cinchophen Oxidation Test of Function of Hepatic Cells. S. S. Lichtman, New York.—p. 98.
*Physostigmine Salicylate in Treatment of Exophthalmic Goiter: Two Hundred Cases. I. Bram, Philadelphia.—p. 126.
Staining of Reticulocytes by Brilliant Cresyl Blue: Influence of Solutions of Substances. C. W. Heath and Geneva A. Daland, Boston.—p. 133.
*Paravertebral Injections of Alcohol for Relief of Cardiac Pain: Review of Experience to Date and Report of Nine Cases. R. L. Levy and R. L. Moore, New York.—p. 146.

Poliomyelitis.—Burrows states that while the exact portal of entry of poliomyelitis is not known, from the clinical and pathologic studies available it seems that the disease must enter by way of the gastro-intestinal lymphatics (Peyer's patches and the solitary follicles). Symptoms in the latter region are always present, while symptoms in the throat are not common. From this portal of entry the disease spreads to contiguous lymphatic tissues in the body. In the mild cases, immunity and recovery result after a limited amount of this tissue is involved. In the less resistant cases, wider extension results, even to the involvement of the lymphoid structures of the central nervous system. In this regard the disease resembles other infectious diseases. When a number of persons are infected, for instance, with streptococcal sore throat, in one the disease ends after an involvement of the throat alone; in another it spreads from the throat to the larynx and trachea; in another to the bronchi; and in others pneumonia and death result. So in infantile paralysis it appears that, in the great mass of cases, immunity develops with involvement of small parts of the peripheral lymphatic tissue; in others, more of this tissue is involved, so that one may palpate the cervical, axillary, inguinal and even the epitrochlear and popliteal lymph nodes; in still others, the infection spreads to the lymphatic structures of the nerve tissue. While there was a time when it was thought that poliomyelitis was peculiar in that cases of it are often widely separated, it has now become known that this is not true. It is evidently only a complication in a widespread infectious disease. Most persons show a striking resistance to this infection. An involvement of the gastro-intestinal lymphatics alone is the picture seen in most of them. Many others do not show these symptoms to an extent sufficient to stop their ordinary pursuits of life. It is in the light of these facts and the pathology as it is known that the author has suggested that the name infantile paralysis be changed. It is possible that such a change in the name and the new attitude that it may create will lead to a more rapid advance in the knowledge of the nature of the disease. Such a change in name may also create a more understanding attitude toward it on the part of the public and correct some false impressions. At present the methods of quarantine are evidently inadequate and probably quite useless in most instances. Since it appears that this disease is as widespread as measles, and since the great majority of cases are mild, it does not seem likely that a sufficient number of cases can be recognized to stop any epidemic by quarantine. It is evident, therefore, that other methods must be devised. It seems necessary from the clinical and pathologic studies already made that some method be devised by which the resistance of the whole population can be raised. Some method of vaccination or inoculation such as that used in diphtheria may be the means by which the hideous aspects of this disease can be removed. A mild infection with poliomyelitis seems to leave no bad effects. It is the paralysis or paralysis and death that await the few in every community that must be guarded against.

Experimental Edema.—Shelburne and Egloff produced edema in a dog by a diet low in protein but adequate in carbohydrate and fat. The chemical, pathologic and clinical observations made on this animal were essentially the same as the observations made on those in which edema had been produced by selective removal of plasma proteins (plasmapheresis). The chemical, pathologic and clinical determination made on all the dogs were similar to those found for dogs in which edema was produced through an inadequacy of protein in the diet. Sodium chloride and sodium bicarbonate increased the edema of dogs with a constant low level of plasma protein, while potassium chloride did not. This is further evidence that the sodium ion has a greater influence on edema than the chloride ion. It seems probable that, given a low plasma protein, the amount of edema is determined by the quantity of the intake of the sodium ion. Evidence is presented to show that the power of the kidney for excreting chloride is normal in edema produced experimentally with a low plasma protein.

Insulin.—Loeb and his associates made a comparative study of the effects of "small" and of "massive" doses of insulin in well fed and previously starved normal adult rabbits protected from hypoglycemia by the ingestion of large amounts of dextrose. The marked variation in the blood sugar curves of rabbits receiving identical treatment is emphasized. "Massive" doses of insulin do not have a greater effect on the hyperglycemia resulting from administration of dextrose than do "small" doses. Evidence is presented which suggests that in well fed rabbits massive doses of insulin have not only relatively but actually less effect on hyperglycemia than do small doses. The storage of glycogen in the liver is suppressed by insulin in spite of the presence of persistent and marked hyperglycemia. In contrast to observations made in the presence of hypoglycemia, no definite histologic changes are found in the suprarenal glands of rabbits protected from insulin shock by dextrose. This suggests that the changes observed by other investigators were associated

with hypoglycemia and were not due to the action of insulin per se. The injection of from 300 to 500 clinical units of insulin produces no general "toxic" effect in normal rabbits.

Acute Hepatitis.—The Sherwoods call attention to the fact that the administration of cinchophen is occasionally accompanied by toxic symptoms. These toxic symptoms are of two types, affecting either the skin or the liver. Twelve cases presenting skin manifestations were collected from the literature; unless complicated by symptoms in the liver, none of these were fatal. Once cutaneous symptoms appear, the readministration of the drug, even in smaller doses, will cause their recurrence. Forty-eight cases of acute hepatic necrosis were collected from the literature, and one case was added. Fifteen fatalities were reported. Poisoning is apparently due to an abnormal decomposition of cinchophen in the body and its retention, thus corresponding to that occurring in munition workers (due to trinitrotoluene poisoning). Neither the length of time the drug was administered nor any save excessive doses (70 grains) appear to predispose to the onset of toxic symptoms. Pathologically, in the fifteen cases in which death occurred, acute hepatic necrosis (acute yellow atrophy) was found with acute fatty degeneration of the heart and kidneys. Therapy consists of complete rest in bed and the forced feeding of fluids and carbohydrates. Only one patient who recovered retained clinical signs of portal stasis (splenomegaly). Readministration of the drug, even in much smaller doses, will usually produce jaundice immediately.

Essential Hypertension.—Ayman found that in seventy-six unselected, untreated patients with essential hypertension, the diastolic blood pressure fluctuated widely during periods of observation extending in the individual cases up to one and a half years. It therefore cannot be denied that patients with even advanced essential hypertension may, and usually do, have marked fluctuations in their diastolic blood pressure from visit to visit. The degree of fluctuation depends to a certain extent on the number of observations made on the patient: the more frequent the observations, the greater the fluctuation recorded. The lowering effect on the diastolic blood pressure of sitting in a quiet room also seems definite and, conversely, the elevating effect of excitement. It also is seen that in these observations no patient had a fixed, nonfluctuating hypertension. The systolic and diastolic blood pressures fluctuated in all cases, including the few with definite renal involvement. This suggests that, perhaps outside of some cases with extremely advanced so-called malignant hypertension, practically all patients with essential hypertension have fluctuating blood pressures, and as much, by proportion, in the diastolic as in the systolic blood pressure.

Cinchophen Oxidation Test.—Lichtman describes a practical simple and extremely sensitive colorimetric method for the estimation of 2-(ortho-hydroxy-phenyl)-quinoline-4-carboxylic acid (oxy-cinchophen), based on the characteristic Skorczewski-Sohn color reaction and revealing this substance in dilutions of 0.0002 per cent. This test for the functioning of the liver is based on the estimation of the twenty-four hour excretion of oxy-cinchophen in the urine following the ingestion of a standard dose of 0.45 Gm. of cinchophen. In a group of fifty subjects without hepatic dysfunction, from 30 to 100 mg., or from 7 to 21 per cent, of the test dose, was excreted as oxy-cinchophen. The increase in excretion of oxy-cinchophen in the urine may be useful as a quantitative index of an altered metabolism of the cells of the liver whereby they have lost their capacity to decompose this substance further. Biliary stasis or obstruction per se does not materially influence the results of the test, at least not early in the disease. The ingestion of a standard test dose of 0.45 Gm. of cinchophen has not elicited hepatotoxic effects. A limited clinical experience with the test suggests certain diagnostic opportunities. The results indicate that in biliary obstruction due to stone or stricture and in metastatic carcinoma of the liver the daily excretion of oxy-cinchophen is usually less than 200 mg. (42 per cent), while in diffuse degenerative and acute inflammatory lesions involving the parenchyma of the liver more than 200 mg. is excreted in twenty-four hours. In cirrhosis of the liver the results may be normal or below 200 mg. in the chronic stage and above 200 mg. only when an acute or subacute degeneration of the liver is superimposed. In catarrhal jaundice the results are usually below 200 mg. with an occasional sharp increase on repeated tests. In carcinoma of the pancreas a persistent increase above 200 mg. has thus far been obtained. In extrahepatic diseases, such as chronic heart failure, duodenal ulcer, exophthalmic goiter, acute rheumatic fever and pneumonia, there is sometimes an increase in the excretion of oxy-cinchophen.

Exophthalmic Goiter.—Bram discusses the results of the administration of physostigmine for a period of ten weeks in 200 cases of active exophthalmic goiter. In ninety-eight, or 49 per cent, the benefit obtained was highly encouraging and may be lasting; in forty-eight, or 24 per cent, the benefit was transient though tangible, and in the remaining fifty-four, or 27 per cent, no benefit was discerned. Excepting in five patients suffering from persistent diarrhea, no contraindications or untoward results were noted from the administration of physostigmine salicylate in doses corresponding to one-thirtieth grain three times a day in adults. The most satisfactory results were noted: (1) in the extremes of age, i. e., in patients under 14 and above 50; (2) in those approaching remission after having had one or more crises; (3) in sufferers from this disease over a period of four or more years, i. e., the chronic or protracted forms of exophthalmic goiter; (4) in those presenting a basal metabolic rate of less than plus 40 per cent; (5) in those presenting extreme exophthalmos, and (6) in those presenting cardiac arrhythmia, especially auricular fibrillation. The improvement in the behavior of the heart was the first effect noted. A reduction in rate and force of the heart's action was followed by improvement in the basal metabolic rate and all subjective and objective manifestations of the disease. Improvement in exophthalmos in many instances of chronic and stubborn cases was gratifying. In a few cases of postoperative recurrence with excessive exophthalmos, physostigmine was particularly satisfactory in results. From these observations it appears that physostigmine deserves high regard in the management of exophthalmic goiter.

Alcohol in Cardiac Pain.—Levy and Moore, on the basis of fifty-seven cases reported in the literature and nine observed personally, make a critical analysis of the results of paravertebral injections of alcohol for relief of cardiac pain. The known facts concerning the nervous mechanisms involved in the transmission of cardiac pain are briefly stated. The technic of injection, as described, is relatively simple, but it requires skill acquired by experience on the cadaver. The procedure has the disadvantage of being unaided by visual guidance. Of forty-nine cases in which adequate data are available, 51 per cent of the patients obtained complete or almost complete relief; improvement was noted in 34 per cent, and in 15 per cent the operation was a failure. Some patients were benefited only slightly and temporarily; in others, the result was strikingly successful. In one personal case there has been complete relief from pain for sixteen months. After injection, a majority of the patients suffered from hyperesthesia of the wall of the chest and painful intercostal neuritis in the segmental distribution of the nerves into which injections were made. At times the discomfort lasted for as long as six weeks, and it was apparently unavoidable. Many patients had fever following injection, which lasted from a few days to a week. In two of the cases, effusion into the left pleural cavity followed the injections. Horner's syndrome was observed in seven of fifteen cases in which notes on this point are available. Its occurrence did not afford an index of the ultimate therapeutic result. It tended to disappear in the course of several weeks or months. From their observations the authors conclude that paravertebral injection of alcohol offers a reasonably good hope of some relief to patients with paroxysmal cardiac pain. Final judgment as to its value and limitations must be reserved until more cases have been observed over longer periods. For the present, it should be tried only after carefully planned medical treatment has failed to alleviate intense suffering. The procedure is relatively safe, and so far it has been unattended by operative fatality. The method has a sounder physiologic basis and is less dangerous than cervical sympathectomy. This form of therapy is entirely symptomatic. The basic pathologic condition is unaltered. Patients in whom pain has served as a danger signal of overexertion should be warned, if relieved from attacks, against exceeding the functional capacity of the heart.

Archives of Pathology, Chicago

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Reactions of Bone Marrow in Experimentally Induced Thrombocytosis. F. D. Gunn, Chicago.—p. 153.
Experimental Studies on Reticulo-Endothelial System: V. Influence of India Ink on Ratio of Urea in Blood. M. A. Goldzieher and I. Sherman, Brooklyn.—p. 180.
Experimental Pathology of Liver: I. Restoration of Liver of White Rat Following Partial Surgical Removal. G. M. Higgins and R. M. Anderson, Rochester, Minn.—p. 186.
Individuality Differentials in Strains of Inbred Rats. L. Loeb, St. Louis, and Helen D. King, Philadelphia.—p. 203.
Chronic Bronchitis with Foreign Body (Elastic Fibers) Reactions in Lungs. F. S. DuBois, Chicago.—p. 222.
Histogenesis of Amyloid Bodies in Central Nervous System. A. Ferraro and L. A. Damon, New York.—p. 229.
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Archives of Surgery, Chicago

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*Osteochondritis Dissecans: Résumé of Theories of Etiology and Consideration of Heredity as Etiologic Factor. G. Wagoner and B. N. E. Cohn, Philadelphia.—p. 1.
Closed Intestinal Loop: III. Aseptic End-to-End Intestinal Anastomosis and Method for Making Closed Intestinal Loop Suitable for Physiologic Studies. K. H. Martzloff and G. E. Burget, Portland, Ore.—p. 26.
*Scaleniotomy in Surgical Treatment of Pulmonary Tuberculosis. J. W. Gale and W. S. Middleton, Madison, Wis.—p. 38.
Acute Pancreatitis (Pancreatic Necrosis): Experimental and Clinical Study, with Especial Reference to Significance of Biliary Tract Factor. W. H. Wangensteen, M. L. Leven and M. H. Manson, Minneapolis.—p. 47.
Ascending Urinary Infection: Experimental Study. W. J. Carson, Milwaukee.—p. 74.
*Carcinoma of Breast in Young. B. J. Lee, New York.—p. 83.
*Esophageal Fistula in Experimental Animal. T. S. Wilder and J. Stokes, Jr., Philadelphia.—p. 111.
*Partial Cholecystectomy. W. L. Estes, Jr., Bethlehem, Pa.—p. 119.
*Spontaneous Rupture of Urinary Bladder: Two Cases. E. Stone, Providence, R. I.—p. 129.
Cause of Death in Acute Diffuse Peritonitis. B. Steinberg, Toledo, Ohio.—p. 145.
Review of Urologic Surgery. A. J. Scholl, Los Angeles; E. S. Judd, Rochester, Minn.; L. D. Keyser, Roanoke, Va.; J. Verbrugge, Antwerp, Belgium, and A. A. Kutzmann, Los Angeles.—p. 157.

Osteochondritis Dissecans.—Wagoner and Cohn abstract the various theories of the etiology of osteochondritis dissecans found in the literature. They also give five case reports in which osteochondritis dissecans of the knee joint was found in various members of the same family: in three men of one family—son, father and paternal uncle—and in two brothers, in one of whom there was bilateral involvement. On the basis of their observations they conclude that heredity operates as an etiologic factor in the occurrence of osteochondritis dissecans.

Scaleniotomy in Tuberculosis.—Gale and Middleton believe that phrenic block has an established place in the surgical treatment for pulmonary tuberculosis, regardless of location. This measure may be useful either independently or as an adjunct to thoracoplasty. The utilization of phrenic block as a test of the patient's recuperative power or resistance is a recognized procedure. The increased respiratory activity of the upper part of the thorax after paralysis of the diaphragm raises a question as to the physiologic soundness of the operation in apical lesions. From experimental and clinical studies the scaleni have been proved to have an important relation to the respiratory activity of the upper part of the thorax. In a series of cases of pulmonary tuberculosis, scaleniotomy has induced satisfactory immobilization of the involved apex. Combined scaleniotomy and phrenic block apparently answer the need for some surgical measure to induce apical rest coincident with paralysis of the diaphragm. When phrenic block has not effected the desired improvement, one may perform scaleniotomy as an adjunct of a conservative type at a later period, before resorting to a radical measure. The anatomic relationships render simple the combined operation (scaleniotomy and phrenic exeresis). Alone or combined with phrenic exeresis, scaleniotomy must be considered as a preparatory stage when more radical measures are inevitable. Through section of the scaleni, the first rib is subjected to the caudal pull of the intercostal muscles; therefore, when paravertebral thoracoplasty must subsequently be performed, the extent of the resection of the first rib may be reduced and the desired effect obtained. Hence the technical difficulties in the surgical approach to this portion of the first stage of the thoracoplasty may be materially reduced.

Carcinoma of Breast in Young.—Lee emphasizes the fact that cancer of the breast in young women is a much more menacing disease than it is in midlife or in old age. The course is often dramatic in its rapidity, almost simulating an infectious process. When the first symptom is a diffuse enlargement of the breast, a redness overlying the mammary gland or pain, surgical intervention is futile. A more careful examination of younger as compared to older women must be exercised before radical operation is undertaken. Early recurrence is more frequent in younger than in older women and indicates either a poorly chosen case for surgical intervention or poor surgical technic or both. In many of these patients, reliance must be placed entirely on radiation therapy. In well chosen cases, well planned adequate irradiation combined with a carefully performed radical amputation yields the best results.

Esophageal Fistula.—Wilder and Stokes found that, in month old pigs, experimentally produced esophageal fistulas causing complete loss of saliva did not materially interfere with normal growth. The operations were performed in three stages, without the complication of rapid death that had been reported in the case of dogs. On the basis of their observations the authors conclude that apparently loss of saliva is less harmful and proper dietary management more important in these conditions than has been supposed.

Partial Cholecystectomy.—Estes believes that partial cholecystectomy has, and should have, a restricted field. In patients in whom the surgical risk is thought to be great, it should not replace cholecystostomy. Evidence of recurrent disease in the biliary tract has appeared in but one of seven cases and in none of the cases in which a stone was impacted in the cystic duct. If argument were justified, based on so few cases, it would seem that this operation tends to act as a cholecystectomy—it prevents reformation or regeneration of the gallbladder and yet permits drainage as in cholecystostomy. It might therefore have a field of usefulness also in the rare type of secondary operation on the gallbladder in which, owing to adhesions or to a liver that cannot be rotated, cholecystectomy, although indicated, would be impossible.

Rupture of Bladder.—Stone considers spontaneous extraperitoneal rupture of the bladder as the least dangerous type of rupture. Injection of iodized oil into the bladder is suggested as a diagnostic measure. Under certain conditions, spontaneous cure may take place. The two cardinal principles in the management of the emergency phase of such cases are adequate drainage of the bladder and adequate drainage of the space of Retzius.

Indiana State Medical Assn. Journal, Fort Wayne

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Postoperative Complications of Abdominal Operations and Their Treatment. C. A. Nafe, Indianapolis.—p. 407.
Dermatitis Herpetiformis. J. R. Brayton, Indianapolis.—p. 413.
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Attenuation of Diphtheria Bacillus in Synthetic Mediums: Observations on Dissociation, Antigenic Relations and Fermentative Reactions. Mary E. Maver, Chicago.—p. 9.
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Study of Antibacterial Properties of Pyridium, Urinary Antiseptic. A. Goerner and F. L. Haley, Brooklyn.—p. 957.
Standardization of Vibrion Septique Antitoxin. A. S. Schlingman, Detroit.—p. 967.
Comparison of Methods for Determining Size of Erythrocyte. R. L. Haden, Cleveland.—p. 976.
Importance of Time of Search in Examining Stained Preparations for Rare Tubercle Bacilli. J. E. Pottinger, Monrovia, Calif.—p. 985.
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Quantitative Estimation of Total Protein in Cerebrospinal Fluid: New Method with Report on 359 Cases. J. B. McNaught, San Francisco. —p. 999.
Comparative Evaluation of Results of Standard Kahn Precipitation Procedure with Those Yielded by Last Two Tubes. B. S. Levine, Chicago. —p. 1017.
Treatment of Accidental Perivascular Injections of Arsphenamine or Neoarsphenamine. T. K. Lawless, Chicago.—p. 1019.
Fixation of Brain for Anatomic Examination. F. M. Kramer, New York.—p. 1023.

Journal of Urology, Baltimore

26: 1-165 (July) 1931

*Effect of Pituitary Extract on Tonus of Human Pelvis and Ureter and Its Possible Application in Therapeutics of Pyelitis and Related Conditions. W. B. Draper, W. Darley and J. L. Harvey, Denver.—p. 1.
Neurosurgery in Treatment of Diseases of Urinary Bladder: II. Treatment of Vesical Pain. J. R. Learmonth, Rochester, Minn.—p. 13.
*Kidney Function Tests: New Phthaleinometer and Chart for Recording Tests. H. H. Young, Baltimore.—p. 25.
Instrumental Treatment of Prostatism. J. R. Caulk, St. Louis.—p. 49.
*Review of Prostatectomies for Benign Prostatic Hypertrophy at Massachusetts General Hospital in Years 1926 to 1930, Inclusive. C. S. Swan and E. R. Mintz.—p. 67.
Clinical Application of Bladder Physiology. D. K. Rose, St. Louis.—p. 91.
Enuresis Nocturna: Analysis of Forty Cases, Stressing Lesions of Verumontanum as Cause. B. A. Thomas, Philadelphia, and R. J. Hubbell, Kalamazoo, Mich.—p. 107.
Hydronephrosis with Aberrant Polar Vessels: Case. H. N. Dorman, Washington, D. C.—p. 121.
Ureteral Reflux in Pregnant Dogs. E. H. Barksdale, Nashville, Tenn. —p. 131.
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Vesicovaginal and Rectovesical Fistulas: Case of Congenital Rectovesical Fistula. W. E. Lower, Cleveland.—p. 141.
Spina Bifida Occulta with Urinary Symptoms. H. V. Dindlay, New York.—p. 147.
Diverticulum of Bladder Forming Scrotal Hernia: Case. J. W. Hinton, New York.—p. 153.
Bilateral Embryonal Carcinoma of Testis: Case. J. M. Venable and O. P. Flynt, San Antonio, Texas.—p. 155.
Obturator for Modified Kelly Cystoscope. H. M. Ginsberg, Philadelphia. —p. 163.
*Presentation of New Suprapubic Tube. E. R. Myers, Saskatoon, Canada. —p. 165.

Use of Pituitary Extract in Pyelitis.—According to Draper and his associates, intramuscular injections of solution of pituitary and "ampoules of pitressin" reduce the size and density of the pelvic and ureteral shadows as shown by intravenous urography. The change in pelvic and ureteral visualization is the more pronounced the larger the dosage. With the maximum dose, 15 minims (1 cc.), a marked diminution in the size and density of the shadows occurs from three to seven minutes after the injection. Since neither solution of pituitary extract nor ampoules of pitressin when injected intramuscularly produces an antidiuresis in the presence of a diuresis previously induced by an intravenous injection of iopax, it is concluded that the shadow diminishes as the result of accelerated drainage caused by active ureteral and pelvic peristalsis and not of antidiuresis. In the clinical case of pyelitis described, marked relief of pain followed the exhibition of solution of pituitary. In this respect the solution of pituitary was much more efficient than one-sixth grain (0.011 Gm.) of morphine. The possible mechanism of this action of the solution of pituitary is discussed. It must be admitted that the therapeutic value of solution of pituitary in pyelitis and related urinary conditions is an open question.

Kidney Function Tests.—Young states that the phenolsulphonphthalein test is most valuable in showing the early impairment of renal function and is therefore the most important test to put the surgeon on his guard in cases in which prostatectomy is contemplated. Chemical changes in the blood usually demonstrate renal changes at a much later stage, but, taken in conjunction with the phenolsulphonphthalein test, are of great value. By a remarkable inverse parallelism, the two tests furnish a graphic demonstration of improvement under treatment, which is of great value to the clinician. Indigo carmine, while valuable in the cystoscopic detection of ureteral orifices when catheterization is difficult, and in giving a rough idea of the renal function of the two sides, is not nearly so accurate as the phenolsulphonphthalein test, or so valuable an index as to the operability in prostatectomy cases. For more accurate determinations of the phenolsulphonphthalein test the author presents a new rotating disk colorimeter and a new system of charting in which not only are all the important clinical and laboratory examinations provided for but also graphic curves, which show at a glance the phenolsulphonphthalein output and the chemical changes in the blood. These charts furnish the clinician with a ready method, by means of which, at a glance, the conditions present and the improvement from day to day under treatment may be seen.

Benign Prostatic Hypertrophy.—In a study of the 170 prostatectomies for benign prostatic hypertrophy performed at the Massachusetts General Hospital in the years 1926-1930, inclusive, Swan and Mintz found that the mortality has dropped from 18.8 to 5.8 per cent. As time goes on patients are presenting themselves for the operation with shorter duration of symptoms, with less and less damage to the kidneys as revealed by nonprotein nitrogen, and fewer are coming in with acute retention. In patients who had a perineal prostatectomy, healing occurred as quickly, and they had no longer total duration of time in the hospital than the ones who had suprapubic prostatectomy. No particular type of anesthesia was less fatal than any other. Each case should be decided on its own merit. When an expert anesthetist is available, gas, oxygen, ether by him is often far safer than a routine spinal anesthesia. No particular type of local skin preparation prevented wound sepsis more than any other. The causes of death were chiefly circulatory and none were renal. The cardiac consultation backed by an electrocardiogram and a 7 foot heart plate is extremely important. The authors believe that, by a continuance of the tendency to get patients in earlier for prostatectomy, the group as a whole will begin to present themselves with better circulations, as they are already presenting themselves in increasingly better renal condition, and that as a result the mortality in prostatectomy will be reduced to a minimum.

Presentation of New Suprapubic Tube.—The essential features of the tube described by Myers are clear vision and the ability to remove any obstructing clots without interfering with the tube's position and in most cases without disconnecting the apparatus in any way. The tube is stopped with a soft rubber cork, which is easily removed, allowing free access to the tube for removal of any obstructing clots and the application of light to its interior. It can be easily taken apart and cleaned and the rubber is of such high quality as to permit of repeated boilings. The shoulder at which the small tube joins is heavily reinforced and is not easily broken.

Maine Medical Journal, Portland

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Country Practice. F. L. Varney, Monson.—p. 146.

Michigan State M. Soc. Journal, Grand Rapids

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Retrocecal Appendicitis. H. Busher, St. Paul.—p. 717.
Compression Fractures of Vertebrae. M. H. Tibbetts, Duluth.—p. 720.
Racial Differences in Blood Pressure. H. S. Diehl, Minneapolis.—p. 726.
Some of Present Methods Used in Diagnosis and Treatment of Prostatic Hypertrophy. G. J. Thomas and E. W. Exley, Minneapolis.—p. 729.

New England Journal of Medicine, Boston

205: 321-366 (Aug. 13) 1931

Management of Peptic Ulcer. F. H. Lahey, Boston.—p. 321.
Tonus of Autonomic Nervous System in Arterial Hypertension. A. Patek, Cleveland, and Soma Weiss, Boston.—p. 330.
Modern Nursing. A. Worcester, Waltham, Mass.—p. 334.
Progress of Nutrition. F. L. Burnett, Boston.—p. 337.

New Orleans Medical and Surgical Journal

84: 1-94 (July) 1931

Experimental Typhoid Fever with Consideration of Toxins and Endotoxins. W. H. Harris, New Orleans.—p. 1.
Diverticulitis of Colon with Especial Reference to Sigmoid. B. C. Garrett, Shreveport, La.—p. 5.
Chronic Appendicitis. E. R. Nobles, Rosedale, Miss.—p. 13.
Acute Perforation of Peptic Ulcers. C. W. Mattingly, New Orleans. —p. 18.
Hay-Fever a Specialty. W. P. Lambeth, Shreveport, La.—p. 23.
Nonurologic Symptoms Due to Urinary Lesions. E. Weiner, Alexandria, La.—p. 28.
Malaria: Use, Misdiagnosis, Treatment and Prevention. G. H. Wood, Batesville, Miss.—p. 31.
Agranulocytic Angina: Case. S. F. Strain and B. B. O'Mara, Sanatorium, Miss.—p. 34.

New York State Journal of Medicine, New York

31: 937-1000 (Aug. 1) 1931

Treatment of Chronic Osteomyelitis with Live Maggots. F. S. Child, Port Jefferson, and E. F. Eovwera, Pearl River.—p. 937.
Lipiodol Injection of Double Uterus. F. J. Ceravolo and I. Levine, Brooklyn.—p. 943.
Deep Interfascial Infection of Neck. H. J. Burman, New York.—p. 944.
Fluoroscopic Mirror. J. Sarnoff, Brooklyn.—p. 947.
Common Errors in Diagnosis of Heart Disease. L. H. Sigler, Brooklyn. —p. 949.
Sinusoidal Current in Chronic Gonorrhea of Male. H. Neifeld, Brooklyn. —p. 951.
Grievance Committee. H. Rypins, Albany.—p. 952.
Contributions of Medical and Other Sciences. J. H. Gettinger, Bronx. —p. 953.
Various Anesthetics and Certain Methods of Their Administration: Indications and Contraindications for Their Use. J. S. Lundy, Rochester, Minn.—p. 956.
Use of Atropine or Its Derivatives for Treatment of Disease. T. S. Evans, New Haven, Conn.—p. 961.

31: 1001-1064 (Aug. 15) 1931

*Types and Locations of Brain Tumors and Other Space-Displacing Masses Within Cranial Cavity Occurring Without "Choked Disk": Seventeen Cases. D. L. Butterfield, Rochester.—p. 1001.
Tryparsamide in Treatment of Neurosyphilis. H. C. Solomon and S. H. Epstein, Boston.—p. 1012.
General Hospital Neuropsychiatry. G. K. Collier, Rochester.—p. 1016.
*Signs and Symptoms of Multiple Sclerosis with Particular Reference to Early Manifestations. A. C. Odell, Clifton Springs.—p. 1018.
Heating Apparatus for Intravenous Solutions. H. F. Morrison, Tuxedo Park.—p. 1020.
Postoperative Ileus, Its Early Recognition and Control. D. Guthrie, Sayer, Pa.—p. 1021.
Rational Topical Skin Therapy. O. L. Levin, New York.—p. 1025.
Fungous Infections of Feet: Observation of Their Incidence in a School in New York City. G. C. Andrews and F. W. Birkman, New York. —p. 1029.
*Diagnosis of Intracranial Hemorrhage in the New-Born. C. G. Grulee, Chicago.—p. 1032.
Ketogenic Diet in Treatment of Epilepsy in Children. Florence E. Warner, Binghamton.—p. 1036.

Brain Tumors.—Seventeen case histories are presented by Butterfield to illustrate the varying sites and sizes of brain tumors and other space displacing masses which may occur within the cranium without giving evidence of increased intracranial pressure through examination of eyegrounds. They all serve to illustrate the fact that large brain tumors or other space displacing masses may exist within the cranium without giving rise to a "choking" of the optic disks. This, however, does not warrant an assumption that increased intracranial pressure did not exist in many of them, as was readily proved by spinal fluid pressure readings. A lack of a choking of the disks therefore need not deter the clinician from a diagnosis of an intracranial mass if there are other signs to suggest it. A review of the literature warrants the belief that at least 15 per cent of intracranial neoplasms exist without an accompanying choking of the optic disks.

Multiple Sclerosis.—Odell's studies seem to indicate that when any patient complains of vague difficulty with the legs, especially in walking, a thorough neurologic examination is in order and that this should include a roentgen study of the spine after the intrathecal injection of iodized poppy-seed oil to rule out the presence of a cord tumor. It also confirms the observations of others to the effect that among the earlier signs of insular sclerosis will be found difficulty in walking, temporal pallor of the optic disks, absent abdominal reflex, hyperactive knee jerks and nystagmus. As a rule, if scanning speech and intention tremor do appear in the picture, they will be late symptoms and their appearance should not be awaited, if one wishes to make an early diagnosis of multiple sclerosis.

Intracranial Hemorrhage in the New-Born.—Grulee states that at present it is impossible to make a diagnosis of intracranial hemorrhage in the new-born in the majority of instances. Many of the cases which are now diagnosed hemorrhage are unquestionably due to other conditions. Information received from lumbar puncture is by no means always reliable and must be subjected to critical judgment. The reason for this lies primarily in the failure of physicians to realize the difference in symptomatology between the newly born and the older infant. It also lies in the lack of study of this group of conditions at this age, which would not be tolerated at any other period of life.

Ohio State Medical Journal, Columbus

27: 529-600 (July) 1931

Surgical Procedures in Pulmonary Tuberculosis. C. R. Steinke and C. L. Hyde, Akron.—p. 549.
Practice of Medicine: Early History and Economics. E. S. Judd, Rochester, Minn.—p. 562.
Rational Treatment of Acute Empyema. S. O. Freedlander, Cleveland. —p. 565.
Perforation of Esophagus by Chicken Bone. L. Ginsburg, Toledo.— p. 568.

Philippine Journal of Science, Manila

45: 321-481 (July) 1931

Industrial Shells of Philippines. F. Talavera and L. A. Faustino, Manila.—p. 321.
New Parasite of Philippine Amphibia. A. C. Walton, Galesburg, Ill.— p. 351.
Three New Sand Flies from Philippines. C. Manalang, Manila.—p. 355.
Malaria Transmission in Philippines: II. Infection of Anopheles Funestus Giles (Minimus) with Notes on Its Density, Probable Range of Flight, and Larval Control. C. Manalang, Manila.—p. 367.
Philippine Rosin from Pinus Insularis (Endlicher). Irene de Santos, A. P. West and J. Fontanoza, Manila.—p. 383.
Geological Reconnaissance of Northwestern Capiz Province, Panay, Philippine Islands. Q. A. Abadilla, Manila.—p. 393.
New or Little-Known Tipulidae from Philippines (Diptera), IX. C. P. Alexander, Amherst, Mass.—p. 415.
Morphology of Male Flower of Cocos Nucifera Linnaeus. J. B. Juliano and E. Quisumbing, Manila.—p. 449.
Leprosy in Cebu, I. J. Rodriguez.—p. 459.

Public Health Reports, Washington, D. C.

46: 1727-1798 (July 24) 1931

Need for Continued Study in Public Health Work. W. S. Leathers. —p. 1727.
Chemistry of Cell Division: II. Relation Between Cell Growth and Division in Amoeba Proteus. H. W. Chalkley.—p. 1736.
Air Jet Hydrocyanic Acid Sprayer. C. L. Williams.—p. 1755.

46: 1799-1868 (July 31) 1931

Sickness Among Male Industrial Employees in First Quarter of 1931. D. K. Brundage.—p. 1799.
Study of Illness Among Grade School Children. C. C. Wilson, I. V. Hiscock, J. H. Watkins and J. D. Case.—p. 1801.
Fumigation of Loaded Ships. C. L. Williams.—p. 1823.

Radiology, St. Paul

17: 215-424 (Aug.) 1931

Primary Carcinoma of Female External Genito-Urinary Organs Treated with Radium and Roentgen Rays. H. H. Bowing, Rochester, Minn. —p. 215.

Treatment of Compressed and Impacted Fractures of Bodies of Vertebrae. J. Dunlop and C. H. Parker, Pasadena, Calif.—p. 228.

New York City and Cancer Problem: What Municipality Is Doing in Care and Treatment of Cancer Patients, in Propaganda for Prevention of Cancer and in Research Work for Cancer Therapy. I. I. Kaplan, New York.—p. 235.

Roentgen Therapy of Medulloblastoma Cerebelli. F. E. Tracy and F. B. Mandeville, New Haven, Conn.—p. 259.

Results of Irradiation Treatment of Myoma of Uterus: Three Hundred and Eighteen Cases. B. F. Schreiner, Buffalo.—p. 265.

Conditions Which Result in Collapse of Lung. R. P. Potter, Marshfield, Wis.—p. 271.

Pathologic Cervix: Precancerous Lesion. B. H. Orndoff, Chicago.—p. 280.

Chemical Effects of Roentgen Rays on Some Aromatic Colors and Dyes. G. L. Clark and K. R. Fitch, Urbana, Ill.—p. 285.

Accurate Measurement of Small Electric Charges by a Null Method. L. S. Taylor, Washington, D. C.—p. 294.

Roentgen Diagnosis of Aortic Aneurysm. H. G. Sichler, Ann Arbor, Mich.—p. 304.

Relations of Antrum and Cap to Gallbladder: Gastric and Duodenal Peristalsis as Factors in Emptying Gallbladder. N. B. Newcomer, Elizabeth Newcomer and C. A. Conyers, Denver.—p. 317.

Radiography with Great Enlargement (Microradiography) and Technical Method for Radiographic Dissociation of Shadow. A. Vallebona, Genoa, Italy.—p. 340.

Rhode Island Medical Journal, Providence

14: 121-138 (Aug.) 1931

Basal Metabolism in Normal Young Women. G. W. Wells, Providence. —p. 121.

Epidermophytosis or Athlete's Foot. C. D. Sawyer, Providence.—p. 122.

Southern Medical Journal, Birmingham, Ala.

24: 569-658 (July) 1931

Gas and Air in the Tissues: Roentgenologic Study. D. A. Rhinehart, Little Rock, Ark.—p. 569.

Preliminary Report of Twenty-Three Cases of Corneal Opacities Treated with Surgery and Radium. H. L. Hilgartner and H. L. Hilgartner, Jr., Austin, Texas.—p. 574.

Krukenberg Tumors and Other Secondary Ovarian Carcinomas. J. M. Hundley, Jr., Baltimore.—p. 579.

Etiologic Studies of Granuloma Inguinale. W. A. DeMonbreun and E. W. Goodpasture, Nashville, Tenn.—p. 588.

Caput Obstipum Congenitum. L. W. Holloway, Jacksonville, Fla.—p. 597.

Pulmonary Tuberculosis and Pregnancy. R. A. White, Asheville, N. C. —p. 601.

Southwestern Medicine, Phoenix, Ariz.

15: 243-296 (June) 1931

Head Injuries. C. A. Thomas, Tucson, Ariz.—p. 243.

What Constitutes a Modern Bone Surgeon? W. L. Bell, Oakland, Calif. —p. 248.

Newer Anesthetics. T. O. Burger, San Diego, Calif.—p. 250.

Spinal Anesthesia. A. P. Kimball, Yuma, Arizona.—p. 253.

Clinical Application of Sodium Amytal in Surgery and Obstetrics. E. P. Palmer and D. Fournier, Phoenix, Ariz.—p. 256.

Successful Treatment of Eczema, Angioneurotic Edema, Urticaria, Pruritus, etc., by Dietary Regulation and Digestants. O. H. Brown, Phoenix, Ariz.—p. 261.

El Paso's History of Weed Eradication Relative to Hay-Fever. Mrs. J. A. Rawlings, El Paso, Texas.—p. 265.

Case of Acute Destructive Process of Liver of Unknown Origin. S. H. Newman, El Paso, Texas.—p. 266.

Meeting of American College of Physicians, Baltimore, March 23-27. M. K. Wylder, Albuquerque, N. M.—p. 268.

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New Mexico State Medical Society. M. K. Wylder, Albuquerque, N. M. —p. 297.

Specific Treatment of Pulmonary Tuberculosis. J. W. Flinn, Prescott, Ariz.—p. 299.

Study of Intestinal Tuberculosis. W. C. Davis, Tucson, Ariz.—p. 305.

Atelectasis (Massive Collapse) in Pulmonary Tuberculosis. E. A. Gatterdam, Phoenix, Ariz.—p. 311.

Criticism on Current Conception of Arrest in Pulmonary Tuberculosis. L. H. Fales, Livermore, Calif.—p. 318.

Surgery of Peptic Ulcer with Report of Four Recent Cases of Perforation. R. L. Ramey, El Paso, Texas, and C. R. F. Baker, Sumter, S. C.—p. 323.

Toxemias in El Paso City-County Prenatal Clinic. C. F. Rennick, El Paso, Texas.—p. 326.

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Blood Transfusion. L. W. Frank, J. D. Hancock and H. M. Weeter, Louisville, Ky.—p. 611.

Skin Lesions Encountered Among Allergic Individuals. J. P. Henry, Memphis, Tenn.—p. 614.

Nervous Diseases Among Children: Review of Admissions to Children's Hospital, Washington, D. C., 1925-1930. D. D. V. Stuart, Jr., Washington, D. C.—p. 620.

Periodic Seasonal Incidence of Gastro-Intestinal Symptoms Complicating Respiratory Infections in Childhood: Seasonal Gastro-Enteritis. C. C. McLean, Birmingham.—p. 624.

Roentgen-Ray Therapy: Observations Based on Treatment of Six Hundred Cases. E. C. Thrash and W. P. Baker, Atlanta, Ga.—p. 632.

Sympathetic Ganglionectomy and Ramisectomy for Chronic Infectious Arthritis: Clinical Interpretation. P. S. Hench and W. M. Craig, Rochester, Minn.—p. 636.

Chagas' Disease in Panama: Three Cases. J. W. Miller, Panama, R. P. —p. 645.

State-Wide Dental Program. N. T. Ballou, Richmond, Va.—p. 647.

Significance of Typhoid Agglutinins in Serum of Normal Persons. L. C. Havens and Catherine R. Mayfield, Montgomery, Ala.—p. 652.

An Improved Stethoscope. J. G. Moore, Birmingham, Ala.—p. 654.

Surgery, Gynecology and Obstetrics, Chicago

53: 129-272 (Aug.) 1931

*Diseases of Urinary Tract in Infancy and Childhood. H. L. Kretschmer, Chicago.—p. 129.

Arterial Encephalography and Its Value in Diagnosis of Brain Tumors. E. Moniz, A. Pinto and A. Lima, Lisbon, Portugal.—p. 155.

Study of Effects of Division of Cervical Esophagus of Dog. J. W. Beard, Virginia Butler and A. Blalock, Nashville, Tenn.—p. 169.

Derangement of Menisci of Knee Joint: End-Result Study of One Hundred and Forty-Two Cases Treated by Operation. L. A. Lantzounis, New York.—p. 182.

Primary Synovial Membrane Tumors of Joints. D. M. Faulkner, Richmond, Va.—p. 189.

Anatomic Factors Influencing Malignancy of Skin of Face. P. O. Snoke, Lancaster, Pa.—p. 196.

Technic of Transverse Cervical Cesarean Section. L. E. Phaneuf, Boston.—p. 202.

Operation for Tumors of Bladder. G. P. LaRoque, Richmond, Va.—p. 205.

Second Cesarean Section After Bilateral Ureteral Transplantation Into Sigmoid. J. M. Pierce, Ann Arbor, Mich.—p. 208.

*Gynopathic Backache: Study of Its Nature and Mechanism of Its Production, with Especial Reference to Uterine Retroversion. A. Sturmdorf, New York.—p. 209.

Surgical Approach for Removal of Certain Pineal Tumors: Case. W. P. van Wagenen, Rochester, N. Y.—p. 216.

Syphilis of Intestine. J. de la Guardia, Preston, Cuba.—p. 221.

Reestablishing Flow of Bile Into Intestinal Tract. E. Horgan, Washington.—p. 225.

Surgical Treatment of Carcinoma of Colon. F. W. Rankin, Rochester, Minn.—p. 229.

Vertical Skin Grafts for Reconstruction of Eyebrows. S. Bunnell, San Francisco.—p. 239.

Principles and Technic Involved in Present Day Treatment of Cancer of Uterine Cervix. F. E. Neef, New York.—p. 241.

Treatment of Intracapsular Fracture of Hip Joint by Method of Extension, Abduction and Internal Rotation (Whitman's Method), with Especial Reference to Group Age Sixty and Beyond. W. G. Stern, R. R. Reich, C. H. Heyman and L. E. Papurt, Cleveland.—p. 250.

Empyema in Children. G. B. Packard, Jr., Denver.—p. 255.

Diseases of Urinary Tract in Childhood.—Kretschmer states that lesions of the urinary tract in infancy and childhood occur with greater frequency than is generally supposed. The types of lesions occurring in infancy and childhood closely parallel the types found in the adult, with the exception of benign hypertrophy of the prostate and malignant disease of the prostate and bladder. In certain instances, examination has revealed the presence of serious destructive lesions of the kidney, lesions that might have been cured had an early diagnosis been made and treatment instituted. The problems of diagnosis and treatment differ in no way from the same problems in the adult. Close cooperation between the general practitioner, the pediatrician and the urologist is desired so that these patients may be examined in the early stages of their disorder and thus reap the benefit of proper treatment, thereby preventing destruction of vital organs.

Gynopathic Backache.—According to Sturmdorf, gynopathic backache is a spastic backache, the gynopathic factor being one among many causes of myospastic pain in the lumbosacral area. This form of myospasm is a protective phenomenon, analogous to that observed in other muscular areas over deep seated irritative lesions. It protects the inflamed pelvic viscera by tilting the pelvis out of the direct line of intra-abdominal pressure. A normal range of mobility at the sacrolumbar articulation responds to this protective demand without undue muscle strain and hence without pain. On the other hand, any structural or functional limitation of the essential mobility range in the sacrolumbar joint induces muscle strain manifested by

spasticity and pain. The relative degree of restriction in lumbosacral mobility will determine the intensity of the muscle strain and its resulting pain. The conformation of the sacrolumbar angle determines the angle of uterine poise. The term normal uterine poise is purely relative. The poise of the uterus is normal when its long axis coincides with the axis of the plane of the pelvic inlet. As this axis varies with the angle of the individual sacrolumbar junction, so the uterus presents its coincident variation in poise, ranging from the symphysis to the sacral promontory. A uterus in this poise does not cause backache and its surgical anteversion does not cure backache. The depth of the lumbar hollow offers an approximate index of the sacrolumbar angulation and its incident uterine poise. A mobile retroversion at an angle not coincident with the axis of the plane of the pelvic inlet presents a pathologic displacement in which not the displacement as such but the cause of the displacement produces the backache. All these types are adaptively compatible with normal function and comfort. This dictum applies with equal validity to uncomplicated mobile retroversion in relation to gynopathic backache.

Texas State Journal of Medicine, Fort Worth

27: 273-338 (Aug.) 1931

Modern Conception of Tumors of Brain. E. R. Carpenter, Dallas.—p. 280.
Cancer in and About the Mouth, Treated with Irradiation by European Method. C. L. Martin and J. M. Martin, Dallas.—p. 286.
Localization of Myocardial Infarction. M. B. Whitten, Dallas.—p. 291.
Chloroma: Its Relation to Leukemic and Neoplastic Processes. W. G. Reddick and W. W. Brandes, Dallas.—p. 297.
Heart Pain. G. Graves, Houston.—p. 301.
Burning Tongue. J. C. Michael, Houston.—p. 304.
Report of Case of Multiple Myeloma. R. T. Wilson, Temple.—p. 308.
"Avertin" Anesthesia in Gynecology and Obstetrics. C. B. Sacher, Dallas.—p. 310.
Follicular Hormone in Gynecology. H. L. Kincaid, Houston.—p. 313.
Amebiasis with Especial Regard to Its Laboratory Diagnosis. S. J. Lewis, Beaumont.—p. 316.
Trichomonad Flagellates of Intestinal Tract. H. B. Williford, Temple.—p. 320.

United States Vet. Bur. M. Bull., Washington, D.C.

7: 625-716 (July) 1931

Study of Diabetes Mellitus in Ex-Service Men. P. B. Matz.—p. 625.
Healing of Pulmonary Tuberculosis. E. A. Beaudet.—p. 643.
Structural Basis of Mind. C. C. C. Brace.—p. 647.
Mental Concomitants of Heart Disease. N. Morris.—p. 651.
Importance of Routine Reexaminations of Patients in Mental Hospitals. J. A. Pringle.—p. 657.
Neurologic Findings as Aid to Determination of Degree of Disability in Psychoneuroses. A. S. Pendleton.—p. 659.
Ultraviolet Light and Calcium Salts in Epilepsy. P. J. Borrows.—p. 661.
High-Frequency Current in Treatment of Skin Manifestations of Herpes Zoster. W. E. McWhirt.—p. 664.
*Ringworm Infection of Feet. O. Like.—p. 666.
Principles Governing Authorizations of Hospital Admission. J. B. Howe.—p. 670.
Writing of Dental and Medical Papers. G. A. Bullard.—p. 680.

Ringworm Infection of Feet.—Like states that in the management of chronic ringworm infection of the feet it is important to keep the objectives in mind. Among the principal ones are the prevention of disability of the feet and of disability from secondary blood or lymph channel infections; guarding against reinfection of the patient and against the contamination of public bathing floors; the securing of maximum comfort for the patient with a minimum of trouble and expense; and finally, when possible, complete eradication. To accomplish these it is necessary to outline a plan of care and treatment that is inexpensive and convenient to carry out as a routine more or less indefinitely, as otherwise the cooperation of the patient would not prove sufficient or lasting. When exposure to infection is practically certain, as it often is, one may as well not attempt eradication but should treat the patient with the object of establishing permanent freedom from annoyance. For continued comfort in the presence of chronic infection, or in frequent reinfections, strict attention must be given to the footwear, the bath and the treatment. Shoes should be as light and airy as climatic conditions will permit, in order to make evaporation of foot moisture as prompt and rapid as possible. Air-tight footwear, such as arctics and rubbers, should be avoided. Even a shine or polish of the shoes causes a noticeable increase of moisture retention and discomfort. Hose should also be light and should have as frequent change as is necessary for comfort and for the dissipation of moisture. This may mean a change as often as once a day up to once a week. Bathing the feet aggravates the disease and hinders treatment. It should not be done as treatment but only when the general bath is needed. Before the bath the feet should be well anointed with Whitfield's ointment, petrolatum base. This helps to prevent disagreeable activity often noted after the bath. It may also lessen the chance of reinfection of the patient and of the infection of others. After the feet are well dried and the patient is ready to retire, another application of the ointment is well rubbed in. But, if the bath is taken on arising for the day, a careful application of tincture of iodine is preferred after the feet are dry. And it should be remembered that getting the feet wet with water is a bath whether it occurs accidentally in the rain, or in a tub, shower, pool or lake. In the daily application of ointment or stain, routine must be controlled somewhat by judgment and experience. With the ointment caution as to strength is advisable, because full strength may result in temporary disability. A good plan is to begin with one-half strength and gradually to increase the strength as it is found this can be done without injury to the skin. Damage to the skin from overtreatment must be avoided even though a longer time is required to secure control, for it is just as important not to lose, as it is to gain, ground. Usually before retiring one gently rubs the ointment, half or whole strength as may be needed, into the skin in small amounts until all areas are treated. When the application is finished the skin surface should be merely slightly oily, the ointment being used sparingly, rather than generously as it is prior to bathing. On arising one should find the feet rather dry, complete absorption of ointment having occurred during the night. It is at this time that an application of tincture of iodine is made. When this dries, the patient is ready to dress for the day. Fissures which occasionally appear about the bases of the toes may be handled in one of two ways. One should make an application of the stain and protect with a small strip of zinc oxide adhesive for two or three days, or omit the stain and use the ointment in its place for the same length of time. If maceration develops, one should omit the ointment and use only the stain until the condition is under control. It is well at the same time to encourage dryness by keeping the toes separated by small strips of clean gauze bandage for several days. When activity is well under control and is not in evidence subjectively or clinically, treatment is principally before and after bathing, being generously applied at these times, as already outlined. Treatment otherwise may be somewhat relaxed in frequency but is continued just sufficiently for prophylaxis.

Virginia Medical Monthly, Richmond

58: 213-282 (July) 1931

Syphilitic Cardiovascular Disease. W. B. Porter and D. C. Ashton, Richmond.—p. 213.
Sodium Amytal as Preanesthetic Agent with Especial Reference to Its Use in Orthopedic Surgery. T. F. Wheeldon and F. Pilcher, Jr., Richmond.—p. 217.
Importance of Prenatal and Postnatal Care. G. Baughman, Richmond.—p. 221.
Presidential Address. P. C. Colonna, New York.—p. 223.
Thyroid Physiology. E. A. Hines, Jr., Spartanburg, S. C.—p. 224.
Surgical Treatment of Goiter. R. G. Waterhouse, Jr., Knoxville, Tenn.—p. 226.
Effects of Thyroid Disease on Heart and Circulation. A. A. Houser, Richmond.—p. 229.
Diagnosis and Treatment of Thyroid Diseases in Children. W. A. McGee, Richmond.—p. 230.
Cesarean Section with Especial Reference to Lower Segment Transverse Incision: Case Analyses. W. R. Payne, Newport News.—p. 234.
Unusual if Not Unique Operation on Gallbladder. W. L. Peple, Richmond.—p. 238.
Some Fundamentals in Extraction of Teeth. H. Bear, Richmond.—p. 240.
Retrograde Intussusception. H. H. Schoenfeld, Washington, D. C.—p. 242.
Discussion of Prevention of Fetal and Maternal Mortality. H. H. Ware, Jr., Richmond.—p. 245.
Meningitis Caused by Bacterium Aerogenes. F. W. Shaw, Richmond.—p. 248.
Hyperhidrosis. J. B. H. Waring, Cincinnati.—p. 250.
New Anesthesias. P. Jacobson, Petersburg.—p. 252.
Intravenous Urography in Diagnosis of Renal Tuberculosis. A. Chenery, Washington, D. C.—p. 256.

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Archives of Disease in Childhood, London

6: 209-258 (Aug.) 1931

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Familial Splenic Anemia. S. L. Ludbrook.—p. 239.
Case of Perforated Duodenal Ulcer in an Infant. L. Priscilla Harrison.—p. 245.
Enuresis of Allergic Origin. G. W. Bray.—p. 251.

British Journal of Experimental Pathology, London

12: 209-278 (Aug.) 1931

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Comparative Test of Estimation of Hemoglobin by Flicker Hemoglobinometer and Oxygen Capacity Method. C. E. Jenkins and C. S. D. Don.—p. 212.
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Observations on Acidity and Chloride Content of Gastric Juice: II. G. V. Rudd.—p. 226.
Study of Phosphorus Distribution in Bacterial Cultures: Part II. J. Gordon and K. E. Cooper.—p. 234.
Retardation of Lytic Processes by Colloidal Silica Solution. S. L. Cummins and C. Weatherall.—p. 239.
Effects of Colloidal Silica on Growth of Tubercle Bacilli in Blood. S. L. Cummins and C. Weatherall.—p. 245.
Immunization with Killed Herpes Virus. S. P. Bedson.—p. 254.
Studies on Immunity to Hemolytic Streptococci: III. Observations on Variations in Resistance to Phagocytosis Displayed by Broth Cultures of Strains of High and Low Virulence. R. Hare.—p. 261.
Lipolytic Activity of Tuberculous Guinea-Pigs' Tissues: III. Variation of Activity with Spread of Disease. F. C. Happold and A. Taylor.—p. 272.

British Medical Journal, London

2: 331-368 (Aug. 22) 1931

Observations on Treatment of Children at Seaside (Excluding Surgical Tuberculosis). C. Häberlin.—p. 331.
*Pruritus Ani. W. P. Macarthur.—p. 334.
Treatment of General Paralysis of Insane by Induced Malaria: Fifty Cases. R. Lees.—p. 336.
Function of Isolation Hospital in Modern Practice. E. H. R. Harries.—p. 339.
Bathing and Aural Disease. J. E. G. McGibbon.—p. 343.

Pruritus Ani.—Macarthur divides the treatment of pruritus ani into two parts, thus: first, the removal by lavage of the adult female worms which have migrated to the rectum, and, second, attempts to destroy the developing stages in the cecum, appendix, and neighboring parts of the intestine. For the first mentioned purpose nothing is superior to salt and water in a strength of two tablespoonfuls to the pint. If this should cause griping, one should reduce the salt by half, and increase later if possible. Four ounces of the solution is sufficient for an injection, which can be given most readily by means of an infant's two ounce enema bulb, the patient remaining recumbent, with the hips raised, during the operation. Probably he will be unable to retain the solution for more than one or two minutes, and when it is ejected the itching is found to have ceased completely and is not felt again during the night. It is essential that the patient should administer this treatment for himself, because it is useless if given at any time that puritus is not felt. A preliminary simple enema, more elaborate apparatus and larger quantities of fluid are unnecessary complications. The second part of the treatment is the administration of anthelmintic drugs in the hope of destroying the parasites before they migrate to the lower portions of the large intestine. It is difficult to assess their respective values, for most of the preparations recommended are either given with some laxative or themselves act as purgatives and a sharp action of bowels due to any cause may give a temporary relief from pruritus; for this reason, sufferers from undiagnosed enterobiasis sometimes attribute their troubles to constipation. The author does not know of any drug so efficacious as to do away with the necessity for rectal irrigations. Indeed, it is difficult to see how anthelmintics can reach worms lurking in the appendix and cecal pouches, and so long as even two or three are left they may greatly annoy the host. Of the preparations usually recommended, 2 grains (0.13 Gm.) of santonin combined with one-half grain (0.03 Gm.) of mild mercurous chloride is distinctly helpful. Acetarsone had no appreciable effect. Carbon tetrachloride is reported to be highly efficacious, but its employment is hardly justifiable in simple enterobiasis, which can be cured with certainty in other ways. Treatment, especially lavage, may affect the remarkable periodicity of *Enterobius*, the commonest change being an earlier descent of the egg-laying females, so that pruritus may be troublesome before bedtime. But whenever it may appear, a rectal irrigation with salt and water will stop it at once. Rectal irrigations, given as advocated, do away altogether with the necessity for application of mercurial ointments and the like.

Indian Medical Research Memoirs, Calcutta

21: 1-227 (June) 1931

Larvae of Anopheline Mosquitoes, with Full Description of Those of Indian Species. I. M. Puri.—p. 1.

Journal of Mental Science, London

77: 311-464 (April) 1931

Utility of Psychiatric Outpatient Clinic. I. Skottowe.—p. 311.
Further Results with Boltz Acetic Anhydride Test. J. E. Nicole and E. J. Fitzgerald.—p. 321.
Effect of Thyroid Administration on Blood Cholesterol. A. G. Duncan.—p. 332.
On Sense of Effort. W. Burridge.—p. 341.
On Protopathic and Epicritic Sensations. W. Burridge.—p. 344.
On Divisions of Mind. W. Burridge.—p. 345.
Further Note on Possible Structures Mediating Mind. W. Burridge.—p. 351.
On Writers' Cramp and Other Occupation Neuroses. W. Burridge.—p. 355.
On Dreams and Theories. W. Burridge.—p. 358.
Crime and Insanity in India. G. R. Parasuram.—p. 365.
Significance of Neurotic Reaction as Precursor of Schizophrenias. W. M. Harrowes.—p. 375.

Kenya & East African Medical Journal, Nairobi

8: 93-122 (July) 1931

Notes on Pathology of Syphilis. F. W. Vint.—p. 94.
Further Kikuyu Beliefs and Superstitions: Ethical Standards. R. U. Gillan.—p. 102.
Report on Anophelines and Malaria in Trans-Nzoia District. C. B. Symes.—p. 108.

Lancet, London

2: 385-436 (Aug. 22) 1931

*Simple Achlorhydric Anemia. D. T. Davies.—p. 385.
Congenital Elevation of Diaphragm: Six Cases. W. B. Wood and F. G. Wood.—p. 392.
Glossopharyngeal Neuralgia. G. Jefferson.—p. 397.
Blood Transfusion in Two Cases of Auto-Agglutination. W. Stewart and E. E. Harvey.—p. 399.
Observations on Spherule Recently Described in Disseminated Sclerosis. J. A. Praxton and F. D. M. Hocking.—p. 401.

Simple Achlorhydric Anemia.—Davies states that simple achlorhydric anemia appears to be a common and chronic anemia of adult womanhood. The evidence available is suggestive of an iron deficiency, consequent on a defective diet and an impaired gastric secretion. The disorder can be therapeutically corrected by the administration of iron, but this does not remove the cause. Attention to the gastric secretion and measures to improve it should ultimately result in a better intake and a better absorption of iron. The disease is worthy of attention, not only on account of its frequency in women and the ease of its correction from the standpoint of the anemia, but also on account of its appearance in patients who have undergone surgical treatment directed to the stomach. Its development is a further index of the normal function of hydrochloric acid secretion. In addition, it is possible that the malnutritional changes, such as those in the tongue mucosa and entrance to the food passage and in the nails, are related to a long-standing deficiency of iron.

Medical Journal of Australia, Sydney

2: 91-120 (July 25) 1931

Psychiatry and Medical Curriculum. W. S. Dawson.—p. 91.
Ammonium Persulphate in "Yeast Foods" as Cause of Allergic Dermatitis in Bakers. F. S. Hansman.—p. 94.
Effect of Gamma Rays of Radium and of Roentgen Rays on Blair Bell's Colloidal Lead. W. J. Penfold and J. Sutherland.—p. 98.
Macrogenitosomia and Other Disturbances of Growth and Development. W. S. Laurie.—p. 100.

2: 121-152 (Aug. 1) 1931

Common Ocular Conditions in General Practice. D. R. Gawler.—p. 121.
Effect of Colloidal Lead Orthophosphate on Domestic Hen. W. B. S. Bishop.—p. 130.

Quarterly Journal of Medicine, London

24: 447-640 (July) 1931

Studies on Achlorhydria and Anemia. D. T. Davies.—p. 447.
Elimination of Focal Sepsis in Treatment of Parathyroid Tetany. G. C. Linder, C. F. Harris and F. R. Fraser.—p. 469.
Right Bundle-Branch Block: Analysis of Clinical Records of Fifty-Six Cases with Typical Electrocardiograms. S. B. B. Campbell and S. I. Turkington.—p. 481.
Clinical and Epidemiologic Characteristics of Variola Minor and Its Differential Diagnosis. C. J. McSweeney.—p. 487.
*Size and Shape of Heart in Goiter. J. Parkinson and H. Cookson.—p. 499.
*Functional Disorders of Colon. E. I. Spriggs.—p. 533.
Excretion of Creatinine by Human Kidney in Health and in Nephritis. C. L. Cope.—p. 567.
Intracranial Tumors. F. M. R. Walshe.—p. 587.

Size and Shape of Heart in Goiter.—Parkinson and Cookson examined a consecutive series of 130 patients with goiter causing symptoms with the primary object of deciding the size and shape of the heart by roentgenography. In addition, a series of postmortem records of forty-three goiter cases was investigated to determine the incidence and distribution of cardiac hypertrophy. It was found that the form of the heart is often affected in a characteristic way in goiter. Undue prominence of the pulmonary arc was a striking feature of about one third of the series, sometimes appearing as a convexity on the left profile, sometimes combining with an enlargement of the heart to the left to render this profile straight. An exaggeration of this arc is often an early change, preceding any enlargement of the heart chambers. Postmortem measurements showed that the pulmonary artery was often dilated. The left auricle was not enlarged out of proportion to that of other chambers of the heart—a sharp distinction from the heart of mitral stenosis. The superior vena cava was sometimes prominent; this would be expected with the venous congestion of heart failure, but such an explanation applied to only a small proportion. The aortic arch reached too high a level in the chest in about one third. The form of the vascular pedicle was modified occasionally by a retrosternal goiter. When symptoms are mild or of short duration, the heart in goiter is normal in size and shape. When symptoms are severe and of long standing, it is in a fair proportion both enlarged and modified in shape. The greatest enlargement is seen with auricular fibrillation and failure. The special form characteristic of the goiter heart is based on a combination of prominence of the pulmonary arc, of the left ventricle, and to a minor extent of the right auricle. As a result of these changes the heart may be generally enlarged, the contour retaining much the same shape as in the normal heart, whereas almost all other forms of cardiac disease causing enlargement greatly modify the shape. In their fully developed form, changes in the left arcs produce a distinctive picture with its straight left border and a right auricular arc only slightly enlarged. The heart so disposed, when seen from in front, has some resemblance to a ham. This picture differs from that of mitral stenosis in the relatively slight prominence of the right auricle and the fuller aortic knuckle as seen in the first oblique position. It approximates more to the cardiac outline of combined mitral stenosis and aortic incompetence. Roentgen examination is a help in judging the presence or severity of a cardiac lesion in a patient with goiter. The demonstration of cardiac enlargement is important from the standpoint of the surgical treatment of goiter. When present, it is an added reason for, rather than a contraindication to, surgical treatment. Though the greater the enlargement, the poorer is the prospect of a complete return to normal, yet the aid of surgery will often be required to check the progress of the lesion. In deciding the cause of obscure cardiac symptoms or enlargement, or of auricular fibrillation with or without failure, the discovery of the characteristic roentgen picture may suggest a goitrous etiology.

Functional Disorders of Colon.—Spriggs gives an analysis of the disorders and diseases of the colon that were noted in the examination of 4,000 consecutive patients suffering from various complaints. Among these, the disorders of the colon classed as functional are colonic delay or constipation, irritable colon including nervous diarrhea, spastic colon and colospasm, mucous colitis or catarrh of the colon, and mucomembranous colitis. Coloptosis with or without gastroptosis or visceroptosis may be present with any of these disorders. Excluding colonic delay, there were reviewed in this series 242 cases in which the main diagnosis was one of functional disorder of the colon. After an account of the normal functions of the colon, etiologic factors are discussed, the chief causes of the severer forms of functional disorder being neurosis, constipation, aperients, and past infections. The overuse of aperients is thought to be as potent and frequent a cause as constipation. In an analysis of 1,000 cases of colonic delay it was found that one fourth of the patients did not complain of constipation. Of the remaining three fourths, six out of seven were taking aperients, 431 of them every day. In this group, colonic disorders were more than double as frequent as they were among the rest. Some other lesion or irritation of the alimentary system is often present. An example of reflex mucous colitis from a kidney stone is given. Coloptosis is regarded as a secondary result, with colonic delay, of a lowered tone of the intestinal wall. Careful fecal examination is necessary, but routine bacteriologic culture has proved disappointing as an aid to diagnosis or treatment. In more than 90 per cent of cases, great benefit or total relief follows adequate treatment.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

47: 931-977 (June 8) 1931

Infantile Kala-Azar in Paris: Case. P. Lereboullet, J. Chabrun and P. Baize.—p. 932.
Malignant Granulomatosis: Pure Splenic Form. C. Achard, M. Bariéty and G. Desbuquois.—p. 937.
Diabetic Coma Resistant to Insulin. M. Labbé and R. Boulin.—p. 943.
Intraspinal Tumors and Pott's Disease: Differential Diagnosis. L. Beriel and G. Kapsalas.—p. 949.
Oxalemia and Tenia. Loeper, Soulié and Tonnet.—p. 952.
Tuberculous Meningitis. G. Caussade.—p. 955.
*Hemolytic Icterus Caused by Trichocephalus. Brulé.—p. 960.
Profile Roentgenograms in Topographic Diagnosis of Pulmonary Lesions. P. F. Armand-Delille and C. Lestocquoy.—p. 965.
Incubation Period in Tabes and in Dementia Paralytica. A. Sézary and Roudinesco.—p. 968.

Hemolytic Icterus Caused by Trichocephalus.—Brulé reports two cases of hemolytic icterus caused by *Trichocephalus*. He states that in spite of all efforts this problem is still unsolved. He concludes by stating that his two cases show that such a common parasite as *Trichocephalus* is capable of provoking hemolytic icterus. They demonstrate once more that hemolytic icterus is a pathologic syndrome that may be produced by highly variable causes. They prove also that the splenomegaly is the result and not the cause of the hemolysis. It is much simpler to cure the patient with a few doses of an anthelmintic than to perform a splenectomy on him. The latter should be reserved for cases of severe congenital hemolytic icterus in which the patient cannot be cured by any other method.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

57: 959-1005 (July 4) 1931. Partial Index

*Periarterial Sympathectomy by Chemical Action. B. Desplas.—p. 991.

Periarterial Sympathectomy by Chemical Action.—Desplas discusses the remarkable results that one obtains by means of Leriche's operation of periarterial sympathectomy. The indications for it are numerous. Unfortunately, this operation is not always simple and it can be performed only on arteries of a certain caliber. Several Austrian and German investigators have studied the effect of various chemicals on the vascular sheaths. Doppler discovered that the best agent for destroying the periarterial sympathetic nerve fibers was a 5 or 7 per cent solution of phenol. To diminish the toxicity and to provide a solution of a constant composition the phenol was replaced by tricresol. To demonstrate the absolute harmlessness of this chemical it was first tried on animals. Tricresol destroys the sympathetic nerve fibers and provokes arterial contraction. The author concludes as follows: 1. Sympathectomy performed by means of chemicals is not only practicable but also effective. It is simpler than the surgical method and gives as good and probably better results because there is a more complete and more extensive destruction of the periarterial sympathetic nerve fibers. The periarterial sheath must never be removed after the phenolization. 2. The phenolization of the vascular pedicles of the viscera is easy to perform. It changes markedly the vascularization of the adjacent viscera by

the destruction of the sympathetic nerve fibers. It may be employed on all surgically accessible vessels. The author has used this method in the treatment of genital dystrophies accompanied by procreative disorders and by the classic endocrine disturbances but he has not always obtained positive results. Nevertheless the proportion of nine successes in fifteen patients treated should encourage perseverance in the use of the method.

Presse Médicale, Paris

39: 849-872 (June 10) 1931

Diabetic Gangrene. M. Labbé.—p. 849.
Pain Produced by Certain Barbital Derivatives Used in Treatment of Epilepsy. G. Maillard and P. Thomazi.—p. 851.
*Combined Treatment with Sodium Salicylate and Sodium Bicarbonate in Acute Articular Rheumatism. D. Daniélopolu, C. Dimitriu and Cimino-Bérenger.—p. 852.
Chemistry of Gastric Secretion in Cardiac Insufficiency. C. Rahier.—p. 855.

Acute Articular Rheumatism: Treatment.—Daniélopolu and his collaborators treated 130 patients with rheumatism by the oral administration of massive doses of salicylates and alkalis. Their conclusions are as follows: 1. The only specific treatment of acute polyarticular rheumatism is the treatment with salicylates. 2. The treatment with salicylates applied according to the classic methods is poorly tolerated by the patient and is insufficient. Sodium salicylate even in small doses produces the characteristic phenomena of intolerance. The usual doses of sodium salicylate (4, 6 or 8 Gm.) are insufficient. With these doses the articular symptoms as well as the fever last longer and cardiac involvement is almost certain. 3. The authors submit the method of massive doses of salicylates and alkalis, which is based on the following rules: (*a*) The total daily dose given is increased up to 25 Gm. Larger doses are given to children than to adults (per kilogram of weight). (*b*) The treatment must be started early enough and must be rapidly increased until it reaches the maximal dose. (*c*) In the moderately severe cases the average total daily intake should be 15 Gm., in the severe forms 25 Gm. (*d*) The treatment must be continued for weeks and months, as long as there are indications for it. (*e*) The doses should be divided in such a manner that the patient will have to take the medicine every two hours during the day and every four hours during the night. (*f*) Each dose should be diluted in 100 cc. of water and should be followed by a small meal. (*g*) The patient has to observe an antiketogenic regimen. (*h*) The patient's system must be alkalized by the administration of massive doses of sodium bicarbonate; a double dose of sodium bicarbonate should be given with each dose of salicylate. 4. The massive salicylo-alkali method is tolerated perfectly, despite the large daily doses and the prolongation of treatment for weeks and months. 5. This method markedly influences the fever and the articular symptoms, which disappear much more rapidly than after the regular methods of treatment. The massive salicylo-alkali method is the only one that prevents the development of chronic cardiac lesions. 6. This method should be employed also in infectious pseudorheumatism. Although it is much less effective in this condition, one may nevertheless expect some improvement.

Pediatria, Naples

49: 625-680 (June 15) 1931

Incomplete Osteogenesis. C. Sorrentino.—p. 625.
*Reflexes of the Normal New-Born. F. Rolando.—p. 645.

Reflexes of the Normal New-Born.—Rolando states that, from his experimental studies carried out under rigorous conditions and with all the necessary controls, he is induced to conclude, without confining himself to the special details of any one reflex, that the reflexes of new-born infants present a great variety of behavior, which makes their systematization difficult. This remarkable variety in type, intensity and so on makes it impossible to attribute to the reflexes any pathognomonic importance, such as may be done in the adult. It is difficult to decide whether a deviation is the expression of a change in the central nervous system, since such variations may be found also under physiologic conditions. Since, by the use of a definite method, all the more common and important nervous reflexes can be provoked, it is rather the constant absence of certain reflexes, together with possible deviations of other reflexes, such as a marked inequality of the reflex on the two sides, that will give indications as to the status of the central nervous system and as to the probability of the presence of an organic or functional change.

Policlinico, Rome

38: 265-324 (June 15) 1931. Surgical Section

Peritoneal Pseudomyxoma of Appendicular Origin. V. Alberti.—p. 265.
Strangulation of Meckel's Diverticulum in Right Femoral Hernia. G. S. Donati.—p. 278.
*Intervention in Two Hundred Cases of Gastroduodenal Ulcer. E. Oliani.—p. 288.
Retroperitoneal Echinococcus Cysts of Right Iliolumbar Region. S. Ragone.—p. 292.
Survival of Leukocytes in Certain Surgical Disorders. C. Rossi.—p. 303.
Gastrojejunocolic Fistula: Pathogenesis, Prophylaxis and Treatment. N. Spinelli.—p. 310.

Intervention in Two Hundred Cases of Gastroduodenal Ulcer.—Oliani reports his personal experience with resections for gastroduodenal ulcer. To the 300 cases previously reported, he now adds 180 cases, a total of 480 cases of resection, with the results of which he is fully satisfied. In the last 180 cases the mortality has dropped from 8.8 per cent to 6 per cent, and in the last 90 cases to 4.5 per cent. There were fifty-six operations for peptic ulcer after palliative operations. There were fifty-nine patients presenting perforated ulcers, with a mortality of 13.8 per cent; during the past year, in thirty-two cases in which operation was performed there were two deaths. The author discusses the indications for intervention, the operation and the postoperative treatment. He concludes that gastropyloric resection gives the best results. In hematemesis, after transfusion of blood he performs resection. In perforated ulcer, he limits himself to burial of the ulcer with suturing.

Riforma Medica, Naples

47: 869-908 (June 8) 1931

Germicidal Properties of Air at Seashore. O. Casagrandi.—p. 871.
*Complex Diabetic Coma. G. Pellegrini.—p. 875.
Behavior of Pressure of Cerebrospinal Fluid in Various Disorders of Nervous System. C. Olivero.—p. 881.

Complex Diabetic Coma.—Pellegrini brings out that diabetic coma may be complicated by a true renal insufficiency, which may give to the clinical picture the character of a uremic coma, and since, at other times, in diabetic coma evident signs of hepatic insufficiency may be noted, its characteristic would be the lack of ketogenesis, with a more or less accentuated reduction of the alkali reserve. Owing to the interest in such problems, the author reports a case of diabetes mellitus with grave changes in the liver, in which death was associated with complex comatose manifestations. He studies also the pathogenic mechanism.

Rivista di Patologia e Clin. della Tuberculosi, Bologna

5: 429-519 (June 30) 1931

Anatomic Changes in Guinea-Pigs Treated with Filtrates of Human Tuberculous Material. U. Soli.—p. 429.
*Use of Dietetic Treatment of Gerson, Herrmannsdorfer and Sauerbruch in Pulmonary Tuberculosis in Child. R. Pachioli and G. Gianni.—p. 446.
Coefficient of Robustness (Pignet and Gaujoux) in Tuberculosis in Child. F. Macri.—p. 470.
Transplacental Infection with Filtrable Virus. P. Zuccola.—p. 476.
Areas of Tympanism in Hydropneumothorax. A. R. Nelli.—p. 482.

Dietetic Treatment of Gerson, Herrmannsdorfer and Sauerbruch in Tuberculosis.—Pachioli and Gianni give a survey of the bibliographic material on the dietetic treatment of Gerson, Herrmannsdorfer and Sauerbruch in tuberculosis, concerning which, in recent years, numerous experiments, especially in Germany, have been made. The authors report briefly the clinical and the roentgen data and the results of laboratory examinations carried out on a group of children, with pulmonary tuberculosis, on whom the treatment was tried. They observed that the diet was well borne by all the patients and found, in the greater majority, some increase in weight and an improvement in the general condition. It was not possible, however, to discover any influence of the treatment on the pulmonary lesions or on the evolutional aspects of the disease. The authors conclude that the results secured, while not so marked as those reported by the proponents of the method, are rather favorable and are probably due chiefly to the salt-free regimen, slight value being attributed to the other therapeutic factors, particularly the mineral salts.

Archiv für Schiffs- und Tropen-Hygiene, etc., Leipzig

35: 393-442 (July) 1931. Partial Index

Histologic Investigations on Dermatitis Verrucosa and Mossy Foot. E. G. Nauck.—p. 394.
*Probable Relation of Plants Containing Coumarin to Epidemiology of Malaria. H. Ziemann.—p. 410.
Phlebotomus as Conveyer of Dog Leishmaniosis. N. J. Chodukin, M. S. Sofieff, F. J. Schevtschenko and G. L. Radsivilovskij.—p. 424.

Probable Relation of Plants Containing Coumarin to Epidemiology of Malaria.—Ziemann points out that investigators who have studied malaria have observed that in some regions malaria disappears in spite of the fact that the biologic requirements are apparently still the same. Various theories had been advanced to explain this; however, none of them seemed as convincing as the one to which d'Hérelle has called attention, which has been corroborated by observations made by Krysto and Willcocks. According to this theory plants containing coumarin, particularly a certain kind of clover, are instrumental in preventing malaria. It is assumed that female anopheles mosquitoes suck on the flowers of this clover containing coumarin and that this has a deleterious influence on the sexual forms of the malaria parasites in the infected mosquito, or it is possible that even the odor of the plants has this effect. The author recommends a further investigation of this problem and he gives lists of plants that contain coumarin.

Klinische Wochenschrift, Berlin

10: 1241-1288 (July 4) 1931

*Movement Hyperthermia and Constitutional Hyperthermia: Growth Fever. E. Feer.—p. 1241.
Electrodermatogram: Trophic Innervation of Skin. H. Regelsberger.—p. 1244.
Roentgenography of Spleen and Liver by Means of Contrast Medium. H. Baumann and C. Schilling.—p. 1249.
Use of Fresh Apple Powder in Treatment of Diarrheal Conditions in Children. A. Wiskott.—p. 1252.
Analytic Comparison of Fresh Apples and Apple Powder. G. Malyoth.—p. 1255.
Nutritional Preparation from Grain Rootlets and Yeast. Spiegel and E. Landwehr.—p. 1255.
Function of Saliva. J. K. Mayr.—p. 1257.
Relation of Acidity Curve to Secretion Actually Taking Place Following Test Drink. L. Dinkin.—p. 1259.
Experimental Evaluation of Action of Various Bromine Compounds. S. Hermann and Marie Freund.—p. 1263.
Tests Made Simultaneously with Electrocardiograph, Roentgenograph and Ionograph. J. Jacobi, R. Janker and W. Schmitz.—p. 1264.
Spleen and Carbohydrate Metabolism. A. V. Marx.—p. 1265.
Diverticula of Digestive Tract. J. Mahn.—p. 1265.

Movement Hyperthermia and Constitutional Hyperthermia: Growth Fever.—Feer states that anxious parents often consult the physician about a child, who for weeks or months has had a slightly increased temperature. The increased temperature is either discovered accidentally, or after a febrile disease it is observed that the temperature does not become entirely normal. In discussing the causes of these subfebrile temperatures, the author points out that a localized rectal hyperthermia may be the result of much exercise of the legs and therefore physiologic. Other factors that may increase the temperature are exposure to strong sunshine, hot weather, high moisture content of the air and heavy clothing. Hyperthermia that is produced by thirst, or by excessive sodium chloride and protein intake occurs especially in young children. Why external factors influence the rectal temperature more than the axillary temperature is not entirely clear, but it is probable that the autonomic nervous system plays an important part, for in sensitive and asthenic types such as in persons with dermographism, or with cardiovascular neuroses, and in children with exudative or spasmophilic diathesis or with hyperthyroidism, it is especially frequent. Even psychic factors may cause an increase in the temperature. Thus in movement hyperthermia constitutional factors are often essential. It is comparatively easy to recognize movement hyperthermia if only the rectal temperature is increased while the axillary temperature remains normal. However, it may be difficult to determine the cause of the hyperthermia, when with involvement of external and constitutional factors the axillary temperature is likewise increased. It is necessary to make sure that there are no infectious causes, no occult tuberculosis, no chronic catarrhs and inflammations of the tonsils, no pathologic processes of the ears, the teeth or the sinuses, no chronic cystopyelitis, chronic endocarditis or cerebral processes. In order that all these conditions may be excluded, observations may have to be continued for weeks or even months. It should also not be overlooked that continued overnourishment, especially with too much milk and protein foods, may cause an increased temperature. But even when all pathologic factors as well as movement hyperthermia can be excluded there are still children in whom increased temperature persists. In such cases one may assume a constitutional or habitual hyperthermia. The author also calls attention to the concurrence of hyperthermia and excessive growth and he designates this form of hyperthermia as growth fever. In the conclusion he points out that the prognosis of these forms of hyperthermia is favorable and no special care or therapeutic measure is necessary, but only a normal mode of living.

Medizinische Klinik, Berlin

27: 983-1020 (July 3) 1931

Problems in Researches on Brain. C. von Economo.—p. 983.
*Practical Method for Determination of Circulation Time by Means of Sodium Dehydrocholate. M. Winternitz, J. Deutsch and Z. Brüll.—p. 986.
Tuberculosis and Pregnancy. H. U. Ritschel.—p. 988. C'td.
Gold Therapy in Various Forms of Arthritis. R. Freund.—p. 992.
Modification of Tonus and Peristalsis of Human Digestive Tract by Electricity. A. Beutel and P. Mahler.—p. 993.
Thoracoscopy and Pneumolysis: Closed Endothoracic Division of Cord-like Adhesions and Kornitzer-Maendl Surgical Thoracoscope. E. Kornitzer and E. Waltuch.—p. 995. C'td.
Clinical Significance of "Atypical" Forms of Pneumonia. T. Bársony and J. Holló.—p. 997.
Nuisance of Tattooing. M. Bab.—p. 999.
Connection Between Chemotherapeutic Action and Reticulo-Endothelial System. R. Prigge.—p. 1000.
Sodium Biphosphate in Conditions of Exhaustion. H. Babatz.—p. 1002.

Method for Determination of Circulation Time.—After evaluating methods for the determination of the circulation time that have been employed by other investigators, Winternitz and his associates describe their own method, which they employed in 300 cases for 700 tests. They inject 5 cc. of a 20 per cent solution of sodium dehydrocholate into the vein of the arm without previously producing stasis. In normal persons there is from eight to fourteen seconds after the injection a sudden bitter taste sensation, which disappears rapidly. The circulatory conditions remain entirely unchanged. Paravenous depots are harmless and undesirable secondary effects are never observed. A repetition of the test after a short interval gives the same results. The normal circulation time is between eight and fourteen seconds. Factors that influence the circulation time are: the functional condition of the myocardium, frequency and rhythm of the heart action, condition of the blood, and peripheral circulatory factors. If rare cases of pathologic bradycardia are disregarded, the only cause of a retardation of the circulation is true cardiac insufficiency. Insufficiency of the left side of the heart retards the circulation more than that of the right side of the heart. The circulation time is especially prolonged in cardiac asthma and in Cheyne-Stokes respiration. The determination of the circulation time is of practical value in the differential diagnosis between cardiac asthma and other dyspneic conditions, for in bronchial asthma, in persons with mediastinal phlegmon, and in suffocation attacks during spontaneous pneumothorax the circulation time is normal. By means of the circulation time it is also possible to differentiate between organic and functional angina pectoris. In the functional form the circulation time is normal whereas, if the angina pectoris is caused by hypertension, mesaortitis or atherosclerosis there is a retardation. The determination of the circulation time is likewise valuable in deciding on the advisability of malariotherapy or of arsphenamine treatment and also in giving medical advice in regard to sports and to athletic activities to persons with heart disease. It is of diagnostic value in determining latent involvement of the aortic valves in mitral defects. It aids in the differential diagnosis of cardiac and extracardiac ascites; of circulatory, renal and local edema; of cardiac, cerebral, pulmonary dyspnea, and dyspnea of obese persons; in painful enlargement of the liver. The frequency and rhythm influence the circulation time only when they are extremely abnormal. There is an acceleration of the circulation in frequencies over 140 and a retardation in frequencies of less than 45. Arrhythmia

perpetua does not exert a marked influence. Anemia shortens the circulation time. Peripheral factors that retard circulation are not known. Remedies with a vasodilator action accelerate the circulation. Arterial hypertension, diabetes, obesity, myxedema and Addison's disease do not have a direct influence on the circulation time. Thyrotoxicosis accelerates the circulation inconstantly.

Münchener medizinische Wochenschrift, Munich

78: 1125-1166 (July 3) 1931. Partial Index

*Modification of Wassermann Reaction and of Other Reactions by Escape of Tannic Acid from Cork Stoppers of Shipping Containers. F. Plaut. —p. 1125.
Optokinetic Nystagmus in Ophthalmologic Practice. K. Vogelsang.—p. 1126.
Peritonitis Caused by Ascarids. G. B. Gruber.—p. 1129.
Influenza Bacteria in Bartholinitis. F. E. Koch and Elisabeth Krämer. —p. 1131.
Biologic Causes of Failures of Calmette Vaccination. G. Enderlein.—p. 1132.
Pathologic Changes in Rhythmic Electrocardiogram and Its Clinical Significance. A. Pierach.—p. 1136. C'cn.
Quackery on Patients with Speech and Voice Disturbances and the Guilt of Physicians. M. Nadoleczny.—p. 1139.
Cold Staining of Tubercle Bacilli with Methyl Violet. P. Deseniss.—p. 1142.

Modification of Wassermann Reaction by Tannic Acid from Stoppers of Shipping Containers.—Plaut observed that specimens of cerebrospinal fluids that were sent to the laboratory from great distances often showed a slightly yellow discoloration and in the course of the Wassermann reaction they had an anticomplementary effect. Since the specimens were from patients in whom xanthochromia as the result of hemorrhage, blockade, icterus or iodine could be excluded, the changes in the specimens must have taken place during transport. The shipping containers were closed with cork stoppers and accordingly tests were made to determine whether the stoppers were the source of a substance that caused these changes in blood or cerebrospinal fluid specimens. The results of these tests are summed up as follows: From cork stoppers of shipping containers there may escape into the specimens minute quantities of tannic acid, which cause disturbances in the course of the Wassermann reaction. Precipitations that disturb the outcome of flocculation reaction may likewise be caused by the small amounts of tannic acid. The precipitations also impair the exact determination of the protein content, and the colloid reactions of the cerebrospinal fluid may likewise be weakened. To eliminate these shortcomings the author recommends the use of rubber rather than cork stoppers for the shipping containers of specimens for seroreactions.

Wiener klinische Wochenschrift, Vienna

44: 861-896 (July 3) 1931

Ostearthritis Deformans. F. J. Lang.—p. 861.
Early Complications of Acute Otitis Media. W. Krainz.—p. 864.
Causes of True Muscle Hypertrophy in Venous Stasis. A. Posselt.—p. 867.
General Physiology of Heart: Review of Twenty Years of Experimental Work. L. Haberlandt.—p. 870.
Isolated Inflammation of Lacrimal Canal (Dacryocanaliculitis). F. Herrenschwand.—p. 871.
Medical Evaluation of Physical Condition Following Foot Races. F. Gaisböck.—p. 872.
Extended Glioma of Right Pons with Final Symptoms of Short Duration. G. Stiefler.—p. 875.
Clinical Considerations on Functional Theory of Arthritis Deformans. L. Petschacher.—p. 877.
*Observations on Tooth Pulp and on Maxillary Bone in Congenital Syphilis. W. Bauer.—p. 879.
Type of Linking of Iso-Agglutinable Qualities on Human Erythrocytes. F. Plattner and H. Hintner.—p. 882.
Nature of Alveolar Phagocytes in Lungs of Mammals. J. Mathis.—p. 885.
*Rare Ocular Changes in Thyroidal Disturbances. H. Gasteiger.—p. 887.
Etiology of Osteochondritis Coxae Juvenilis Deformans. E. Just.—p. 889.

The Tooth Pulp and Maxillary Bone in Congenital Syphilis.—Bauer points out that the significance of Hutchinson's teeth as a sign of congenital syphilis is still being disputed, and he thinks that only microscopic examination of the tooth pulp and its surroundings in children with congenital syphilis who have not undergone treatment can reveal the effects of syphilis on the teeth. He reports the results of his microscopic investigations on the upper and lower maxillae of one stillborn infant and of three infants aged 2½, 6 and 6½ weeks, respectively. All of them showed syphilitic symptoms such as syphilitic osteochondritis, gummas, syphilitic pemphigus and papules in the mouth. The results of the microscopic studies are summed up as follows: 1. In congenital syphilis spirochetes are demonstrable in the tooth germ, in the pulp in the noncalcified dentin, in the calcified dentin, in the dental sac, in the enamel germ and in the enamel epithelium. 2. The spirochetes are especially numerous in the areas of most intense growth; namely, the basal portion of the tooth germ. 3. The syphilitic process and the resulting vascular involvement and local circulatory disturbances cause changes of the odontoblasts, the ameloblasts and the dental sac. The hypoplasia of the enamel is probably the result of the injury of the ameloblasts, which in turn is caused by edema and hemorrhages. 4. The changes of the maxillary bones in congenital syphilis are a rarefying and fibrous inflammation of the bone marrow and an ossifying periostitis.

Ocular Changes in Thyroidal Disturbances.—Gasteiger reports the case of a man, aged 47, who developed symptoms of exophthalmic goiter. Following surgical treatment of the goiter there developed marked swellings of the skin of the face, particularly of the lids, also chemosis and exophthalmos. When thyroidal preparations were administered these symptoms disappeared. The psychic disorders, such as apathy and indifference, which had set in after the operation, disappeared likewise following the administration of thyroidal preparations. The author thinks that the inhibition of the movements of the eyeballs had a mechanical cause, namely, the swelling, for it was secondary, just like the marked impairment of vision, which was caused by the continuous mechanical irritation and by pollution of the cornea by secretions. In discussing the etiology the author expresses the opinion that the manifestations are myxedema symptoms, which is proved by the psychic behavior, by the type of cutaneous swellings and finally by the efficacy of thyroidal preparations. The formation of saclike cutaneous swellings may occur either in hyperthyroidism or in myxedema and can therefore be readily explained in this case. However, it is surprising that the exophthalmos developed after the disappearance of the symptoms of hyperthyroidism and simultaneously with the myxedema manifestations. It is also pointed out that this exophthalmos with its inhibited motility and with its chemosis differed from that usually observed in hyperthyroidism in that in the latter condition there usually is a normal motility of the eyeball and chemosis is absent. For this reason the author assumes that the conditions are probably caused by swellings of the orbital tissues, the existence of which is proved by the chemosis. He concludes that the manifestations in this case are rare ocular symptoms in postoperative myxedema. A review of the literature convinced him that there is no other detailed report of such cases; he found only two similar cases mentioned but detailed clinical histories were not given.

Zentralblatt für Chirurgie, Leipzig

58: 1681-1744 (July 4) 1931. Partial Index

*Uremia Following Blood Transfusion. F. J. Irsigler.—p. 1682.
Tuberculosis of Thyroid. R. Meyer.—p. 1689.
Subcutaneous Rupture of Abdominal Rectus Muscle, Especially in Persons of Advanced Age. O. Kapel.—p. 1693.
Morphology of Semilunar Bone and Injuries of Wrist Joint. E. Ettorre. —p. 1698.
*New Plaster-of-Paris Cast for Treatment of Fracture of Humerus. W. Scheiber.—p. 1701.

Uremia Following Blood Transfusion.—Irsigler reports a case of fatal hemolysis following blood transfusion. A man, aged 37, was brought to the hospital for surgical treatment with the diagnosis of perforated ulcer. The operation revealed a ruptured spleen, which was extirpated. Because of the enormous loss of blood the patient was given an intravenous infusion of 50 cc. of physiologic solution of sodium chloride and later a blood transfusion of 500 cc. The preliminary agglutination test had been negative, and immediately following the transfusion the patient's condition improved. However, on the following day the temperature increased and symptoms of uremia became manifest. Several days later the patient died in uremic coma. The author reports the results of the necropsy and then discusses the causes of uremia following blood transfusions. He

thinks that uremia as a late result of blood transfusion is caused primarily by mechanical blockade of the uriniferous tubules (oliguria). The simultaneously developing alterations in the epithelial linings, especially of the main portions, are of a degenerative nature. They are probably caused by toxic products of protein disintegration, which become liberated during hemolysis. The reported case proves, what already had been indicated by animal experiments, that agglutination and hemolysis, as reactions following mixture of different types of blood, are not connected so closely as the agglutination tests indicate. In animal experiments the two phenomena can be produced independently of each other. From an agglutination test in vitro one cannot infer either the actuality or the intensity of the agglutination or the development or absence of a hemolysis in vivo. Blood transfusions should therefore be made only following careful determination of blood groups.

New Plaster-of-Paris Cast for Fracture of Humerus.—Scheiber points out that in the treatment of fractures of the humerus it is of primary importance that the position obtained by reposition be retained during the healing process. In order to counteract the dislocation, which in fractures of the humerus is caused partly by gravity and partly by muscular traction, the author devised a new method, which permits exact fixation by means of subsequently adjustable extension and by pressure from the side. Most other methods that aim to accomplish this impair the movement of the injured person considerably and require hospitalization of the patient. The author's method, however, is suitable for ambulatory treatment. Following proper rotation and abduction of the arm, the plaster is applied to the thorax over cotton, but to the shoulder, the axilla and the upper arm without cotton. To overcome the lateral dislocation, four sticks of Spanish reed are placed lengthwise on all four sides of the arm at the level of the fracture. They are covered with plaster in such a manner that only the screws at the ends remain visible. When the screws are tightened, the reeds are pressed down and in this manner fixation is accomplished by a comparatively slight pressure. The sticks are placed so that their pressure does not strike a superficial artery or nerve. In an emergency (radial nerve) a hollow reed may be used. The continuous traction is effected by steel splints that reach to the wrist. The author gives a description and an illustration showing how the traction apparatus is adjusted, and he asserts that his method is simple and gives good results and that it can be modified for fractures of the lower arm.

Zentralblatt für Gynakologie, Leipzig

55: 2145-2208 (July 11) 1931

*Hormonal Therapy of Amenorrhea. H. U. Hirsch-Hoffmann.—p. 2146.
Influence of Cycle Hormone Preparation on Sexual Function. H. Lewin.—p. 2150.
*Implantation of Ovarian Tissues as Substitute for Surgically Removed Ovaries. G. Katz.—p. 2162.
Adenomyosis. H. Lewinski.—p. 2163.
Endothelial Symptom in Pregnant Women. N. Louros.—p. 2167.
Gynecologist and Health Pass. F. H. Bardenheuer.—p. 2168.
New Self-Holding Vaginal Speculum. O. Köster.—p. 2170.

Hormonal Therapy of Amenorrhea.—In answer to the question whether the hormone preparations extracted from the urine of pregnant women have the same therapeutic effect as those that are extracted from the incretory organ, Hirsch-Hoffmann cites a case history which indicates that the organ extract is more effective. He further discusses the various types of ovarian preparations and differentiates between those that contain the follicle hormone and those that contain the corpus luteum hormone. He shows that the follicle hormone alone cannot be effective in counteracting amenorrhea but that the corpus luteum hormone is likewise necessary. Whether a combination of the two may eventually be effective has not been definitely proved as yet. The author thinks that if hormonal therapy is to be employed in amenorrhea the hormone preparations of the anterior lobe of the hypophysis should be resorted to. He warns against overdosage. The treatment should begin with small doses (from 2 to 4 rat units). In the university women's clinic in Hamburg, the hypophyseal hormone preparations were administered intravenously or intramuscularly. For intravenous injection a preparation was used that had been extracted from the anterior lobe of the hypophysis, and for the intramuscular injection a preparation was used that had been prepared from hormones eliminated with the urine. It is further pointed out that the cases in which hypophyseal hormone therapy is employed should be carefully selected. In the amenorrhea of the normal menopause the effects of the hypophyseal preparations are slight and only temporary; nevertheless, in some cases with psychic disturbances and severe deficiency symptoms hypophyseal hormone preparations may be tried. It is also necessary that the possibility of a gravidity be excluded before hormonal treatment is resorted to. A case is cited in which treatment with a hormone preparation caused an abortion, and for this reason it is recommended that the Aschheim-Zondek test should first be made. The forms of amenorrhea that are particularly suited for hypophyseal hormone therapy are the primary amenorrheas of young girls with hypoplastic genitalia and the secondary amenorrheas that follow abortions or confinements. In the latter cases, if there is a great increase in weight small quantities of a thyroid preparation should be given in addition to the hypophyseal preparation. Hyperhormonal amenorrhea may likewise be treated with hypophyseal hormone, for it is probable that the hormones produced in the organism of the patient are of inferior quality and therefore ineffective; however, one should be especially careful with regard to the dosage in these cases.

Implantation of Ovarian Tissue.—Katz points out that, in women in whom the ovaries have been removed, hormonal therapy is effective only as long as the medication is continued and when it is discontinued the deficiency symptoms are often the more severe; in some cases it is entirely ineffective. For this reason he attempted to produce permanent hormonal depots in the organism by implantation of ovarian tissues. He implanted from five to six slices, which he obtained from women in whom an ovary had to be extirpated because of a cyst, for the cyst rarely causes a degeneration of the entire ovary and usually there are healthy tissues left. He implanted the slices of ovarian tissues by means of interrupted catgut sutures into the abdominal fat tissues. The treatment was employed in seven cases and as the result the deficiency symptoms that had been caused by the castration disappeared. In five of the women menstruation even returned, after intervals of from two to three months. However, the favorable effects lasted only about two years, for the ovarian tissues had been absorbed. In order to exclude the ferment action of the fat and to prevent the rapid absorption of the ovarian tissues, the author covered them before implantation with a section of the tube 0.5 cm. in length and closed the tube at both ends. The desired effect was obtained, for in the three patients who were treated in this manner menstruation set in and the good results have persisted to the present day. The implantations were done four years ago.

Vestnik Rentgenologii i Radiologii, Leningrad

9: 1-96, 1931

*Influence of Intravenously Administered Radon on Blood. M. J. Nemenov and R. G. Gurevitch.—p. 7.
*Roentgen Diagnosis of Acute Mastoiditis. J. B. Kaplan, D. G. Rokhlin and S. A. Reinberg.—p. 19.
*Clinical and Roentgenologic Picture of Stomach in Cancer of Uterus. J. A. Oksenov.—p. 29.
*Contrast Roentgenography in Unhealed Biliary Fistulas. J. D. Danilyak and A. A. Schtuss.—p. 35.
*Electrocoagulation with Supplementary Roentgen Therapy in Cancerous Conditions of Skin and Mucous Membranes. V. O. Abgarov.—p. 39.
*Echinococcus Infection of Bone. A. A. Abalikhin.—p. 45.
Acquired Malformation of Upper Extremities: Rare Case. M. J. Goldstein and E. A. Balakshina.—p. 51.

Influence of Radon on Blood.—Nemenov and Gurevitch studied the action of intravenous administration of radon on the blood, hematopoietic organs, kidneys and lungs in experimental animals. They state that their method is of great importance in the study of the problem of blood formation. By the comparison of the results of histologic investigations of the hematopoietic organs with those of the analysis of the changes in the circulating blood, one may draw some conclusions on the interrelation between various blood elements. The question of practical use of the intravenous administration of radon for therapeutic purposes is still open. However, one may state in advance that there is a complete lack of promise in regard to the use of this method in the treatment of malignant conditions in the human body. The authors demonstrated that radon is rapidly eliminated from the system; its action is purely selec-

tive, mainly for the leukocyte-producing organs; it was shown also that erythropoiesis was not influenced by radon at all. Their microscopic investigations demonstrated as well that the organs through which radon is eliminated from the system, namely, the lungs and the kidneys, were affected comparatively little. Together, these considerations show that radon administered intravenously does not act on malignant tumors.

Roentgen Diagnosis of Acute Mastoiditis.—Kaplan and his collaborators review various roentgen methods that lead to more correct diagnosis of acute mastoidal conditions. They conclude that: 1. In the diagnosis of mastoiditis, roentgenography is a valuable, supplementary objective method in cases of acute suppurative otitis media, especially in the atypical cases. The roentgenogram of the mastoid must be evaluated only in connection with the data gained from other clinical and laboratory examinations. 2. Roentgenography of the mastoid tends to a better prognosis and narrows the group of indications for surgical intervention. 3. By defining the anatomic relations, roentgenography is a valuable aid in the surgery of the mastoid.

Stomach in Cancer of Uterus.—Oksenov studied the clinical and roentgenologic picture of the stomach in seventy-five patients with cancer of the uterus. His conclusions are as follows: 1. The picture of the stomach in patients with cancer of the uterus demonstrates in a large majority of cases various deviations from the normal; mostly there is a diminishing toxicity, a decrease in the acidity and different variations of the latter type. 2. There is some correlation between these changes (especially concerning the secretory function of the stomach) and the degree of the cancerous involvement of the uterus, as well as the general condition of the sick person. 3. In the analysis of various phenomena in this group of patients, one has always to keep in mind not only the previously mentioned gastric changes but also the possibility of the involvement of other organs, such as the peritoneum and the kidneys, which may simulate gastric disturbances.

Unhealed Biliary Fistulas.—Danilyak and Schtuss studied contrast roentgenography of unhealed biliary fistulas. They describe six cases in which postoperative fistulas developed. The authors conclude by stressing the importance of contrast roentgenography in the differentiation of the causes of the nonhealing of biliary fistulas. Contrast roentgenography allows one not only to discover the occlusion of the tracts but to diagnose the nature and the seat of this occlusion. The latter is of especial value for the surgeon, who prefers to operate according to a previously outlined plan, because in this way the risk of a secondary operation is greatly diminished. The absence of serious complications in the employment of contrast mediums makes this method highly valuable in the differentiation of the causes of the nonclosure of biliary fistulas.

Electrocoagulation in Cancer of Skin and Mucous Membranes.—Abgarov reports eight cases of cancer of the skin and mucous membranes in which he employed electrocoagulation in combination with roentgen therapy. He states that vascular neoplasms are absolutely contraindicated for electrocoagulation, while relatively contraindicated are tumors located near large vessels, tendons, and osseous or cartilaginous structures. The author enumerates the advantages of electrocoagulation in its comparison with surgical intervention. They are as follows: 1. The coagulation of the diseased tissue goes on bloodlessly. 2. There is an insignificant risk of dissemination of cancerous cells, because in the process of electrocoagulation the blood vessels and the lymphatics become thrombosed. 3. Extensive surfaces of the skin may be coagulated, with ideal cosmetic results.

Echinococcus Infection of Bone.—Abalikhin reports a case of echinococcus infection of the femur in a child, aged 13. On the basis of this case and on the review of the literature he draws the following conclusions: 1. Echinococcus infection of the osseous system is a rare disease, encountered, in general, only in 2 per cent of all echinococcus cases. Diagnosis of osseous echinococcus is difficult; hence it is often made only on the operating table. 2. One of its main signs is the frequent fracture of the diseased bone (in the author's case the femur was fractured five times). 3. Multiple echinococcus infection of bone resembles clinically as well as roentgenologically a fibrous localized osteodystrophia, with which it can be often confused. 4. Kazzoni's intradermal test does not always confirm the presence of echinococcus.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

75: 3257-3380 (June 20) 1931

Amyloidosis Cutis. W. L. L. Carol.—p. 3258.
*Treatment of Malignant Tumors with Isamine Blue. G. A. Kreuzwendedich von dem Borne.—p. 3267.
Extraction of Teeth. T. J. Eskes.—p. 3275.
The Rat as Vector in Weil's Disease. D. J. Hulshoff Pol and J. P. Anemaet.—p. 3290.
*Treatment of Leg Ulcers with Acetylcholine. M. Ruiter.—p. 3297.

Treatment of Malignant Tumors with Isamine Blue.—Kreuzwendedich von dem Borne concludes from his researches that isamine blue is an entirely harmless substance, which, in a small percentage of cases, exerts a distinctly favorable action. Considered by itself, it is far from being a "tumor remedy." It is, however, preferable to strongly poisonous remedies such as lead. Its use when combined with diathermy, radium, roentgen irradiation and, possibly, with mesothorium deserves to be thoroughly investigated. In the after-treatment of operable tumors it may prove useful as a means of preventing metastasis and recurrence. All too often it is forgotten that also in the case of operable tumors it is a question not only of local changes but also of "tumor disease," or the general constitutional changes in the tumor patients. The numerous researches on animals, in recent years, point strongly in this direction. For these reasons isamine blue deserves a thorough testing. In inoperable cases, isamine blue often improves the general condition of the patient and relieves the pain.

Treatment of Leg Ulcers with Acetylcholine.—Ruiter treated with acetylcholine eight patients with leg ulcers, and, although the number is not large, he is convinced that acetylcholine, combined with the usual therapy, shortens perceptibly the average time required to heal leg ulcers because in a number of his cases the quality of the scar tissue was better than usual. Especially when an inadequate blood supply was evident, the results were sometimes beyond expectations. Although acetylcholine therapy in ulcers due to other causes than a primary disturbance of circulation, in the nature of the case, is less indicated, it would appear from the second of the cases here reported that even under those conditions highly satisfactory results can be secured. Whether or not the method is adapted to ambulatory treatment the author is not prepared to say, but he admits that the results with a patient who was given ambulatory treatment in a policlinic were much less satisfactory.

Ugeskrift for Læger, Copenhagen

93: 661-682 (June 18) 1931

Intravenous Pyelography. E. de F. Licht.—p. 661.
Wassermann Reaction in Children Treated in Danish Welander Homes. L. B. Lauritzen.—p. 665.
New Hook for Exerting Traction by Hand Used in Operating. V. Møller-Christensen.—p. 666.

93: 683-702 (June 25) 1931

Statistics and Medical Science. J. Fabricius-Møller.—p. 683.
*Carbohydrate Metabolism in Adiposity. S. A. Holbøll.—p. 686.
Quick Diagnosis of Diphtheria by Direct Demonstration of Diphtheria Bacilli. V. Kent.—p. 690.
*Case of Inveterate Lupus Vulgaris Treated with New Finsen Lamp. S. Lomholt.—p. 693.
Concerning Paronychia. F. Bentzen.—p. 695.

Carbohydrate Metabolism in Patients with Adiposity.—In thirty-three patients with obesity, Holbøll determined the blood sugar curve four hours after administration of 70 Gm. of dextrose. In some cases there was a higher maximum rise than normal; in nine, glycosuria. These changes occurred chiefly in patients with adiposity of long standing.

Lupus Vulgaris Treated with New Finsen Lamp.—In Lomholt's case there was extensive lupus of the face of twenty-five years' standing, treated repeatedly by various methods without results. The successful removal by electrocoagulation of a new granulation tumor on the atrophic, partly destroyed nose was followed by treatment of the entire face with three irradiations with the new Finsen lamp, each for one hour, some areas being given four treatments. The treatment lasted about three months, was well borne, and resulted in marked improvement, which has continued for one and a half years to date.